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National Implementation of Regional Pesticide Policies in West Africa: Ghana Case Study Report

Amadou Diarra and Oyinkan Tasié

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AUTHORS

Amadou Diarra (diarraamadou947@gmail.com) is an agronomist and consultant to MSU. He is and former permanent secretary for the Comité Sahélien des Pesticides (CSP).

Oyinkan Tasié (otasié@msu.edu) is Assistant Professor of International Development in the Department of Agricultural, Food and Resource Economics at Michigan State University, East Lansing, Michigan, USA.

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1. INTRODUCTION

1.1. Context

This paper examines pesticide¹ markets and regulations in Ghana. This study explores progress to date in Ghana's country-level implementation of ECOWAS regional pesticide policies. As part of a seven-country set of comparative case studies, this work collectively aims to explore the reasons for uneven rates of country implementation of regional agricultural input policies.

West African countries have long recognized their strong regional interdependencies in agricultural and food markets. For many centuries, long distance trading routes have linked different agro-ecological zones within the region. In more recent years, cross-border movements of people, livestock, farm inputs and outputs have underscored the importance of regional interdependencies for ensuring food security.

Beginning in the 1990s, regional organizations such as CILSS and ECOWAS² have increasingly promoted regional harmonization of agricultural input policies as a means of accelerating agricultural productivity growth, increasing technology spillovers and improving national and regional food security. Given that the region's collection of multiple small countries straddle common agro-ecological zones, the introduction of common regional regulations throughout the region holds the promise of enabling input suppliers to exploit economies of scale in input production, procurement and distribution as well as prospects for technology spillovers (Alston 2000; Haggblade 2013). West African countries have, therefore, generally promoted regional collaboration, with particularly strong bonds developing among the francophone members of WAEMU³ and CILSS.

While regional policies governing inputs such as fertilizer and seeds have been well studied (Keyser et al. 2015), regional pesticide policies and markets have not. In addition to filling this gap, the pesticide studies in this series offer a potentially instructive contrast between the longtime CILSS member countries, which began to implement common regional pesticide regulations in 1992, and non-CILSS ECOWAS member countries, which have recently adopted the CILSS regulatory framework as its model for managing regional pesticide policies in the humid coastal zones.

The CILSS member countries have implemented harmonized regional pesticide policies among its member states despite very different levels of human, administrative and scientific capacity.

¹ Pesticides include three categories of agricultural inputs: herbicides, insecticides and fungicides.

² Founded in 1975, the Economic Community of West African States (ECOWAS) includes 15 member states: Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Ghana, Guinea, Guinea Bissau, The Gambia, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo. Largely overlapping with the membership of CILSS, ECOWAS nonetheless excludes Mauritania and Chad (both CILSS members) while including non-CILSS members Nigeria, Ghana, Sierra Leone and Liberia. ECOWAS aim to create a West African free-trade zone and eventually a common monetary union for a region with an estimated 2010 population of about 300 million people.

³ The West African Economic and Monetary Union (WAEMU), known as UEMOA in French and founded in 1994, includes the eight francophone countries sharing the common currency of the CFA franc: Benin, Burkina Faso, Cote d'Ivoire, Guinea Bissau, Mali, Niger, Senegal et Togo.

For this reason, ECOWAS has modeled its West Africa regional pesticide policy regulations on the CILSS system. In April 2013, ECOWAS formally asked CILSS to help in expanding regional pesticide implementation to the coastal countries. This staggered implementation of regional pesticide policies provides a learning opportunity. As a point of departure, the early adopting CILSS member countries provide a window for exploring how the Sahelian countries managed to implement regional pesticide policies, even in countries with low levels of human and physical capital. Lessons there should help to pinpoint ways in which ECOWAS can improve future country implementation of regional inputs policies more broadly throughout the West Africa region.

1.2. Objectives

The Ghana case study aims to achieve the following goals:

- provide a profile of the structure and dynamics of local pesticide markets
- examine the status of national implementation of regional pesticide policies
- identify gaps and problems in implementing regional pesticide policies

In a second phase, by comparing these results with case study findings from other countries in the region, this work aims to help understand why some countries move rapidly to implement agreed-upon regional policies, while others move slowly or not at all. Ultimately, these comparisons aim to help identify key factors favoring country-level implementation of agreed-upon regional agricultural policies in West Africa.

1.3. Methodology of the study

The present study constitutes one of seven companion national studies of regional pesticide policy implementation in West Africa. The countries examined include three longtime CILSS members (Mali, Senegal and Gambia) as well as four coastal ECOWAS members expected to participate in the newly designed humid zone pesticide regulatory body (Côte d'Ivoire, Ghana, Guinea and Nigeria). Using a standard research protocol, the research team in charge of the each country has spent one week conducting interviews with national regulators and key private sector importers, distributors and retailers and users of pesticides in August 2016. Annex 3 provides the full research protocol applied during these case studies, including market profiles, respondent selection and interview guide, while Annex 1 provides a list of persons interviewed in Ghana. In addition to detailed discussions with regulators and private sector actors, the authors have analyzed available secondary data on pesticide prices, import quantities and farm-level adoption.

2. GHANA PESTICIDE MARKET PROFILE

Ghana grows a variety of crops in various climatic zones ranging from dry savannah to rainforest. The main food crops are maize, rice, yams, cassava and other tubers. The major industrial crops are cocoa, palm oil, cotton, rubber, sugar cane and tobacco. Farmers also grow fruit trees (mangoes) and a lot of vegetables: tomatoes, pepper etc. However, some farmers are faced with shortages of agricultural inputs and difficulties in moving agricultural products to markets (<http://ghanaembkin.org/eng/agriculture>). Insect pests, weeds and diseases are the main biological constraints in crop production in Ghana. Therefore lots of pesticides are used as a remedy against pests and also to solve shortage in manpower.

2.1. Product Composition

In Ghana, marketed pesticides are registered by the Environmental Protection Agency (EPA). In 2015, EPA had authorized 508 pesticides; 391 were fully registered and 117 provisionally cleared for sale (Table 1). The list of pesticides authorized by EPA is presented in Annex 2. Of the 508 pesticides authorized in 2015, about 95% consist of insecticides, herbicides and fungicides. The remaining 5% represent biocides, plant growth regulators, nematocides, adjuvants, rodenticides and molluscicides (Table 1). Among the registered pesticides, herbicides have the largest number but this is not very far from that of insecticides.

Comparison of previous approvals for 2006 and 2011 shows a marked increase in the number of pesticides authorized by EPA. The figures almost doubled between 2006 and 2011 and between 2011 and 2015 (Table 1a and 1b). This indicates a growing interest in the registration of pesticides but also a certain ease of the approval process according to many players in the pesticide sector. In 2013, insecticides accounted for 47%, followed by herbicides with 37%. Two years later, this trend was reversed. This could be due to factors such as shortage of labor in agriculture. (Toé A. 2013).

Table 1 Summary of pesticides registered by EPA in 2015

Pesticide categories	FRE	PCL	Total
Insecticides	171	34	205
Herbicides	143	69	212
Fungicides	53	11	64
Others	24	3	27
Total	391	117	508

Source: Ghana Gazette N ° 15, February 2016,

FRE = Fully Registered Pesticides PCL = Provisionally Cleared Pesticides

Others: Rodenticides, Molluscicides, Nematicides, Plant Growth Regulators, Biocides and Additives

Table 1a Summary of pesticides registered by EPA in 2011

Pesticide categories	FRE	PCL	Total
Insecticides	78	16	94
Herbicides	51	39	90
Fungicides	25	2	27
Others	4	1	5
Total	158	58	216

Source Directory of Ghana Agri-input Dealers 2012

Others: (Rodenticides, Desiccants, Plant Growth Regulators and Biocides)

Table 1b Summary of pesticides registered by EPA in 2006

Pesticide categories	FRE	PCL	Total
Insecticides	44	5	49
Herbicides	29	7	36
Fungicides	13	4	17
Others	5	2	7
Total	91	18	109

Source Etude UEMOA 2006

Others: (Rodenticides, Desiccants, Plant Growth Regulators and Biocides)

The Ghana case study was conducted in the localities of Tamale, Kumasi, Tema and Accra where we interviewed a total of 12 pesticide suppliers comprising of importers, wholesalers and retailers (Appendix 1).

In Tamale, we identified 12 non-selective herbicides which constituted 92% of glyphosate brands and 33 selective herbicides (Table 2). According to the Tamale retailers we spoke with, all pesticides sold in Ghana are authorized by EPA. In this locality, the selective herbicides are used mainly on maize and rice which are the main crops grown in this region. Very few pesticides are sold for use on cassava, yam, cotton, soybean, groundnut and oil palm.

The best-selling non-selective herbicides are glyphosate brands (Table 2a). They are products from Jubaili Agrotech, Wynca Sunshine, Ganorma and LDC. The best-selling selective herbicides are used on maize and rice.

The number of insecticides sold (11 products) amount to only one-third of the number of selective herbicides (32 products). Few fungicides, nematicides and growth regulators are sold in this region (Table 2).

Table 2 List of pesticides sold in Tamale

Pesticides categories	Non Sélective	Sélective (specify the crop)
Herbicides	<p>Glyphosate(s)</p> <ol style="list-style-type: none"> 1. Sunphosate (Wynca Sunshine) 2. Glyphader 480 (LDC) 3. Cutout (Adama West Africa) 4. Flysate (Jubaili Agrotech) 5. Force-up (Jubaili Agrotech) 6. Landlord (Jubaili Agrotech) 7. Rival (Jubaili Agrotech) 8. Sunphosate (Wynca Sunshine) 9. Kondem 10. Sarosate <p>Paraquat</p> <ol style="list-style-type: none"> 1. Pilazone 	<ol style="list-style-type: none"> 1. Nico-Plus (Maize) 2. Pendimethalin (Maize) 3. Stomp (Maize) en provenance d'Allemagne 4. Atrazine (Maize) 5. 2,4-D (Riz) 6. 2,4-D+Propanil (Riz) 7. Bounty (Riz) 8. Propa-Plus (Riz) 9. Propacal-plus (propanil 360 g/l + 2,4-D 200 g/l) Riz Kumark 10. Orizo-plus (Riz) en provenance de l'Allemagne 11. Toprice (Riz) 12. Stomp (Maize, Riz) 13. Propacal-Plus (Riz) 14. Basagran (Riz) en provenance d'Allemagne 15. Bisonrice (Riz) 16. Nicogan 40 SC (Maize) Adama West Africa 17. Stomp CS (Pré-maize et riz) BASF 18. Alligator 400 EC (Pré maize et riz) 19. Sun-atrazine 80 WP (Pré maize, manioc, igname) Wynca sunshine 20. Kabaherb 720 (Riz) Agrohao Chine 21. Buta-plus (Pré riz, soja, coton, arachide, légumes) Kumark 22. Guardforce (Nicosulfuron) Maize (Jubaili Agrotech) 23. Atraforce (Maize) Jubaili Agrotech 24. Butachlor (Rice) Jubaili Agrotech 25. Aminoforce (Rice, Maize, Sugar cane, Oil palm) Jubaili Agrotech 26. Propaforce-Plus (Rice) Jubaili Agrotech 27. Pendimethalin (Maize) 28. Butachlor (Riz) 29. Activus Israel 30. Nicoking (Maize) 31. Agil (Soja)

		32. Oryzo-plus (Riz)
Insecticides		<ol style="list-style-type: none"> 1. Imidachloprid 2. Chlorpyrifos 3. Cyhalothrine 4. Cymeton super 5. Sumitex super 6. K-Optima 7. Dursban 8. Pawa 9. Cypercal 10. Sunpyrifos 48 % EC Wynca sunshine 11. Lambda-super 2,5 EC Légumes
Fungicides		<ol style="list-style-type: none"> 1. Kilazab 2. Suncozeb 3. Insector-T
Nematicides		<ol style="list-style-type: none"> 1. Carbodan 2. Furadan 3. Fura 4. Nematrin
Growth regulators		<ol style="list-style-type: none"> 1. Ethephon

Table 2a. List of most popular pesticides sold in Tamale

Pesticides categories	Most popular pesticides (Top 5)	
	Non selective	Selective (specify the crop)
Herbicides	<p>Glyphosate(s)</p> <ol style="list-style-type: none"> 1. Sunphosate (Wynca Sunshine) 2. Borizaa (Ganorma) 3. Flysate Jubaili Agrotech) (all season) 4. Rival (Jubaili Agrotech) 5. Glyphader 480 (LDC) <p>Paraquat</p> <ol style="list-style-type: none"> 1. Pilazone 	<ol style="list-style-type: none"> 1. Atrazine (Maize) 2. Stomp CS (Maize) 3. Bisonrice (Rice) 4. Aminoforce (Rice, Maize, Sugarcane, oil palm) Jubaili Agrotech 5. Nico-Plus (Maize)
Insecticides		<ol style="list-style-type: none"> 1. Lambda super 2. Sunpyrifos 48% EC
Fungicides		Suncozeb

In Kumasi, a more humid area than Tamale, the list of non-selective pesticides is longer for glyphosate and paraquat brands (Table 3). Selective herbicides sold in Kumasi are used mainly on maize and rice but also on vegetables (tomato, pepper and sweet pepper) which are produced in large quantities in this area. The number of insecticides sold in this area is higher than in Tamale.

According to farmers, many insecticides are used on vegetables (tomato, pepper and sweet pepper). Like the northern area, few fungicides are marketed in Kumasi. In this area, we did not identify nematicides and growth regulators. The best-selling non-selective and selective pesticides are trademarks of Wynca sunshine, Kumark, Remaco (Table 3a).

Table 3. List of pesticides sold in Kumasi

Pesticide categories	Non selective	Selective (specify the crop))
Herbicides	<p>Glyphosate (s)</p> <ol style="list-style-type: none"> 1. Aqua Wura (Obeck Agro Services Ltd.) 2. Adwuma Wura (Kumark) 3. Sunphosate (Wynca Sunshine) 4. Destroyer (Remaco) 5. Sharp (Kumark) 6. Kalach (Calli Ghana) 7. Forceup (Callighana) 8. Flysate 9. Adwumaye 10. Glystar 11. Sharp 12. Adwumera 13. Adwura (Kaakyidu) 14. Roundup (Dizengoff) <p>Paraquat</p> <ol style="list-style-type: none"> 1. Pilazone 2. Paraforce 3. Weedcut 4. Gramosharp 5. Gramopast 6. Gramoquat 7. Gramoxone (Dizengoff) 	<ol style="list-style-type: none"> 1. Propacal-Plus 480 SL : (Kumark) Rice 2. Herbextra 72 SL : 2,4-D (Kumark) Rice 3. Sunfuran 4. Nicoking 5. Nicobear 6. Stomp Maize 7. Nicostar (Nicosulfuron 40 OD, Maize) 8. Herbacut (2,4-D), Rice 9. Cotrazine Maize) 10. Guardforce Maize 11. Atraforce Maize Jubaili Ltd Agrotec 12. Propaforce (propanil, riz) Jubaili Ltd Agrotec 13. Aminoforce (2,4-D, riz) Jubaili Ltd Agrotec 14. Imazethapyr (Vegetables)
Insecticides		<ol style="list-style-type: none"> 1. Rambo : lambda-cyhalothrine 2. Supertop : lambda-cyhalothrine 3. Sunpyrifos : chlorpyrifos (Wynca Sunshine) 4. Sumitex

		<ol style="list-style-type: none"> 5. Dimetryne 6. Lambda-cyhalothrine 7. Actellic super 8. Dursban (Chemico) 9. Dursban 10. Laraforce (lambda-cyhalotrine) Jubaili Ltd Agrotec 11. Imiforce (imidachloprid) Jubaili Ltd Agrotec 12. Lambdamaster 13. Consiplus (Imidachloprid) 14. Starpyrifos 48% EC 15. Lambdasuper 16. Dursban (Chlorpyrifos) 17. Herosuper (propanil) 18. Propacal (propanil) riz 19. Mazilapar 20. Butaphos (butachlor) riz 21. Lambda super 22. Sunpyrifos 23. Confidor 24. Goland 25. Coincidia 26. Sumitox Sunpyrifos 27. Confidor 28. Goland 29. Coincidia
Fungicides		<ol style="list-style-type: none"> 1. Tokin 2. Benlate 3. Diaten

Table 3a. List of most popular pesticides in Kumasi

Pesticides categories	Most popular pesticides	
	Non selective	Selective (specify the crop)
Herbicides	<p>Glyphosate (s)</p> <ol style="list-style-type: none"> 1. Aqua Wura 2. Adwuma Wura (Kumark) 3. Sunphosate (Wynca Sunshine) 4. Destroyer (Remaco) 5. Sharp (Kumark) <p>Paraquat Pilazone</p>	<p>Rice</p> <ol style="list-style-type: none"> 1. Propacal-Plus 480 SL : propanil (Kumark) 2. Herbextra 72 SL : 2,4-D (Kumark)
Insecticides		<ol style="list-style-type: none"> 1. Rambo : lambda-cyhalothrine 2. Supertop : lambda-cyhalothrine 3. Star : chlorpyrifos 4. Sunpyrifos : chlorpyrifos (Wynca Sunshine) 5. Sumitex
Fungicides		

Chemico in Tema sells about 25 types of pesticides; the most important ones are listed in Table 4 and 4a. Chemico imports products that have been formulated elsewhere (mainly in China) and reconditions them in their factory in Tema. Reconditioning involves transferring the products from large containers (up to 10,000 liters) and repackaging them in smaller containers (usually 1 liter, 500 ml or 250 ml) for retail sale. No chemical processing is involved. Chemico sells only products of its brands. Herbicides are the most numerous, followed by fungicides and insecticides (Table 4).

Table 4. List of pesticides sold by Chemico in Tema

Pesticide categories	Non selective	Selective (specify the crop)
Herbicides	Chemozone (Paraquat) Chemosate (Glyphosate)	1. Gallant super 2. Gallant 4E 3. Belazine (atrazine) 4. Chemuron (diuron) 5. Bromacil 6. Bispyribac-sodium (sur le riz) 7. Bensulfuron-méthyl 8. Chemopax (ametryne) 9. Chemosport (pendiméthaline) 10. Rainbow (penoxulam) 11. Stam F 34 (propanil) rice 12. Amino 72 (2,4-D amine)
Insecticides		1. Bifenthrine 2. Dursban 3. Cyperméthrine/Diméthoate (Cymethoate super) 4. Fipronil
Nématicides		1. Furadan (Carbofuran) 2. Marshal (Carbosulfan)
Fungicides		1. Beam (Trimangold) 2. Mancozeb 3. Sulfur 4. Copper 5. Metalaxyl 6. Kemoliate 7. Topcot

Table 4a List of most popular pesticides sold by Chemico in Tema

Pesticides categories	Most popular pesticides	
	Non selective	Selective
Herbicides	Glyphosate (Chemosate) Paraquat (Chemozone)	
Insecticides		1. Dursban 2. Akate master 3. Cymethoate super
Fungicides		Topcot

In Accra, pesticide categories sold seem to be balanced between herbicides, insecticides and fungicides (Table 5). Distributors generally refer to active ingredients instead of commercial products. Non-selective herbicides are mainly distributed by Chemico and Wienco which appear to be dominating the market (Table 5a). Wienco Agriculture is an association of specialists in agriculture covering Ghana, Ivory Coast, Senegal, Liberia, Togo, Mali and Burkina Faso. Its objective is the protection of crops, promotion of good quality seeds, irrigation and compliance with the regulations on pesticides and seeds, Wienco's approach is by sector (eg Rice sector, Maize sector, Cocoa sector, etc.).

.Table 5. List of pesticides sold in Accra

Pesticide categories	Non selective	Selective
Herbicides	<p>Glyphosate(s)</p> <ol style="list-style-type: none"> 1. Rival (Original) Wienco 2. Landlord (Generic) Wienco 3. Chemosate (Chemico) <p>Paraquat</p> <ol style="list-style-type: none"> 1. Chemozone (Chemico) 	<ol style="list-style-type: none"> 1. 2,4-D 2. 2,4-D+Propanil 3. Atrazine 4. Pendimethalin 5. Gallant super 6. Gallant 4E 7. Belazine (atrazine) 8. Chemuron (diuron) 9. Bromacil 10. Bispyribac-sodium (rice) 11. Bensulfuron-méthyl 12. Chemopax (ametryn) 13. Chemosport (pendimethalin) 14. Rainbow (penoxulam) 15. Stam F 34 (propanil) rice 16. Amino 72 (2,4-D amine)
Insecticides		<ol style="list-style-type: none"> 1. Imidachloprid 2. Chlorpyrifos 3. Cyhalothrine 4. Confidor OD (against myrdes on cacao) 5. Ridomil 6. Redox super 7. Karate 8. Bifenthrine 9. Dursban 10. Cyperméthrine/Diméthoate (Cymethoate super) 11. Fipronil
Fungicides		<ol style="list-style-type: none"> 1. Beam (Trimangold) 2. Mancozeb 3. Sulfur 4. Copper 5. Metalaxyl 6. Kemoliate

		7. Topcot
Nématicides		1. Furadan (Carbofuran) 2. Marshal (Carbosulfan)
Growth regulators		1. Ethephon

Table 5a List of most popular pesticides sold in Accra

Pesticides categories	Most popular pesticides (Top 5)	
	Non selective	Selective
Herbicides	Glyphosate (s) Chemosate Paraquat Chemozone	
Insecticides		1. Dursban 2. Akate master 3. Cymethoate super
Fungicides		1. Topcot

Registration and sale of glyphosate increased very rapidly from 2006. The number of glyphosate marks authorized in 2015 is almost 7 times higher than in 2006. The sale of glyphosate is a prosperous activity and all distributors invest in this area. It is not uncommon to note that almost every distributor has its own brand.

The proportion of provisionally cleared glyphosate has also increased from 16.7 % in 2006 to 40 % in 2015. The duration of provisionally cleared pesticide is for a maximum of one year and is non-renewable. This raises the question whether these provisionally cleared glyphosates are then fully registered or whether the distributors change product names and submit a new dossier to EPA for approval. From the list of authorized pesticides, this is not easy to follow.

Table 6. Timetable of glyphosate brands registered for sale in Ghana

Year	FRE	PCL	Total
2006	10	2	12
2011	23	12	35
2015	42	28	70

Source: Etude UEMOA 2006, Directory of Ghana Agri-input dealers 2012, Ghana gazette 2016

To improve the pesticide sector, stakeholders in the sector suggest:

- Importing better quality pesticides

- Do not import pesticides with a near expiry date
- Improve compliance with the law

The solutions are:

- training agro-dealers and farmers

2.2. Farm-level demand for pesticides

In Ghana, agriculture employs about 50% of the workforce. [Ernest Aryeetey & William Baah-Boateng 2016]. Indeed, it plays a crucial role in feeding the population, creation of national wealth, employment and income, and contributes to over 60% of gross domestic product (GDP). About 15.3% to 30% of total exports of goods and services are agricultural commodities. The sector provides both formal and informal employment. Ghana has a variety of crops in various climatic zones ranging from dry savannah to rainforest. Agricultural crops, including yams, cereals, cocoa, oil palm, cashew and cola nuts as well as wood, form the basis of agricultural activities in Ghana. Ghana has a warm tropical climate and is subdivided into three main geographical zones:

1. the coastal belt traditionally for fishing and small farming;
2. the forest area : about one third of the country is the main agricultural area. Cocoa, beans, rubber, sugar cane, oil palm, yam, cassava and are grown;
3. the northern savanna : suitable for breeding of livestock as well as for rice, maize, millet, shea and cola nuts (: <http://www.our-africa.org/ghana>)

However, farmers are faced with shortages of agricultural inputs and difficulties in moving agricultural products to markets. (<http://ghanaembkin.org/eng/agriculture>)

The major industrial crops are cocoa, oil palm, cotton, rubber, sugar cane and tobacco. All the cocoa production, with the exception of cocoa coming out clandestinely from the country, is sold at fixed prices. The government controls the industry through the Ghana Cocoa Board (Cocobod). (: <http://ghanaembkin.org/eng/agriculture>). Cocoa is the most valuable agricultural export for Ghana, which was the third largest producer in the world in 2010 (: <http://www.our-africa.org/ghana>)

The use of herbicides, insecticides and fungicides in Ghana was studied in 2009 (Table 7). This study showed that herbicides are the most heavily used pesticide in Ghana Forty percent of farms use herbicides on at least one plot, while one-third use insecticides and only 5% use fungicides (Table 7). This farm-level evidence confirms the aggregate import data suggesting that herbicides are in the lead (Table 1).

Table 7 Pesticide use during the main season in Ghana, 2009 (%)

Input	Percent using inputs	
	plots	farms
herbicide	26	40
insecticide	20	33
fungicide	3	5

Source: Ghana LSMS 2009, Input use on each plot and farm during the main agricultural season. Total sample size = 2,972 plots and 1,303 farms.

During our field visits in August 2016, the use of pesticides has been assessed on the basis of farmer interviews in Tamale and Kumasi. Tamale is located in the northern region of Ghana. Annual rainfall varies from 1,000 to 1,500 mm. Crops grown there are:

- Cereals: rice, maize, sorghum and millet;
- Food legumes: soybeans, cowpeas, peanuts and pigeon pea;
- Tubers: yams, cassava and sweet potatoes;
- Fruit trees: mango, cashew, shea

In Tamale, in the locality of Nabogu (District Savelugu Nanton) Northern Region, we interviewed five farmers with two women practicing the following crops:

- Maize (1.62 to 2.43 ha / person)
- Rice (0.81 - 1.21 ha / person)
- Groundnut (0.81 ha)

Farmers interviewed indicated that they have been growing these crops for 10 to 20 years. For maize, farmers use Kondem (glyphosate) before seeding to destroy existing weeds on their fields. After sowing and before emergence of maize, they use a combination of Nico-Plus and atrazine. The farmers mix the two active ingredients together and spray them on their fields simultaneously. Effectively, the farmers prepare specially tailored formulations they consider most appropriate for their particular circumstances. According to them, this combination takes care of the weeds for a long time. Weeds growing in plots after these treatments are removed by hand.

Kondem 41 SL (glyphosate) is provisionally authorized by EPA since December 2015 for a maximum period of one year. Herbimaize (nicosulfuron / atrazine combination) is approved by EPA. When Herbimaize is not available locally, farmers make their own combination. This explains why farmers in this locality use Nico-Plus and Atrazine.

For rice, farmers use a combination of Kondem / Butachlor after sowing and before rice has emerged. According to them, Kondem (glyphosate) will control existing weeds and Butachlor will take care of weeds in the germination phase. After weed emergence, farmers applied Megastar twice in the growing season to control emerged weeds. This product is not authorized by EPA.

Most retailers we interviewed maintained that they only sell pesticides approved by the EPA. However, several well-established local traders complained bitterly about the existence of “fake” products on the market and several showed us examples. One noted that he had conducted efficacy trials on some of these products, concluding that several of the fraudulent, unregistered pesticides were ineffective. Despite these complaints, we were unable to obtain reliable estimates of the share of unregistered pesticides currently on sale in Ghana. However, the inventory of glyphosate products sold on the markets in 2016 shows that about 28% were not registered (Appendix 6).

Farmers use very few insecticides but the most common insecticide used are those containing lambda-cyhalothrin or pyrimiphos-methyl).

We visited the rice plots of the two peasant women. The rice was in good condition and did not show a heavy infestation of weeds but rather an irregular application of fertilizers. Women buy fertilizer for 0.4 ha and apply it on 1.2 ha.

In the locality of Duko (District Savelugu Nanton) Northern Region, we interviewed two farmers practicing the following crops:

- Maize (1.62 - 2.43 ha)
- Soybeans (0.81 ha)
- Rice (0.40 ha)
- Peanut / Cowpea (0.4 - 0.81 ha)
- Millet (0.4 ha)
- Tomatoes
- Sweet pepper and pepper

Pesticides used by these farmers on their crops are:

- For maize: Sarosate (glyphosate) is used before planting, Sun-atrazine powder at pre-emergence and Stomp or Kabaherb (2, 4-D) at post-emergence (if required). Empty containers are buried or burned in the field.
- For soybeans: Sarosate is used after plowing and just after sowing. Weeds growing in the plots are then removed manually.
- For rice: Sarosate / Butachlor are used pre-emergence and Bison rice (bispyribac-sodium) is applied post-emergence of the rice.

Pesticides are purchased in Kanshegu or Savelugu. Applications of pesticides are made by the Adventis Development Relief Agency (ADRA).

In Bekwai, a town near Kumasi, we interviewed three farmers. One of them was a pesticide dealer and a teacher. Crops grown by them were:

- Okra / Sweet pepper / Eggplant
- Sweet pepper / Cabbage
- Cocoa

To control weeds, prior to planting of their crops, these farmers use several glyphosate and paraquat brands shown to be very effective. These are:

- Glyphosate brands (Adwura (Kaakyidu) Sunphosate (Wynca sunshine), Roundup (Dizengoff) and Kalach (Callighana) and
- Paraquat brands (Grammapack (Kumark), Grammosharp and Gramoxone (Dizengoff))

They did not cite any selective herbicides used on these crops. This is understandable given the small size of their plots for vegetables. The pesticides used on cocoa do not appear to be numerous on the market. The orders are placed by the Cocoa board and are sold directly to the producers. Their main crops being vegetables, many insecticides such as Super-lambda, Sunpyrifos, Confidor, Goland, Coincidia and Sumitox are used quite frequently.

According to PPRSD technicians, the major constraint to pest management is the misuse of pesticides. Farmers use manually operated backpack sprayers. These sprayers are mostly of poor quality (leakage problems), and the farmers are mostly illiterate. They can't read labels in order to follow instructions. To help solve this problem, three projects have been set up for training of farmers. These are:

- Advanced project: USAID
- ADRA: Adventis Development Relief Agency, Adventist Church
- Agricultural Value Chain Membership Project.

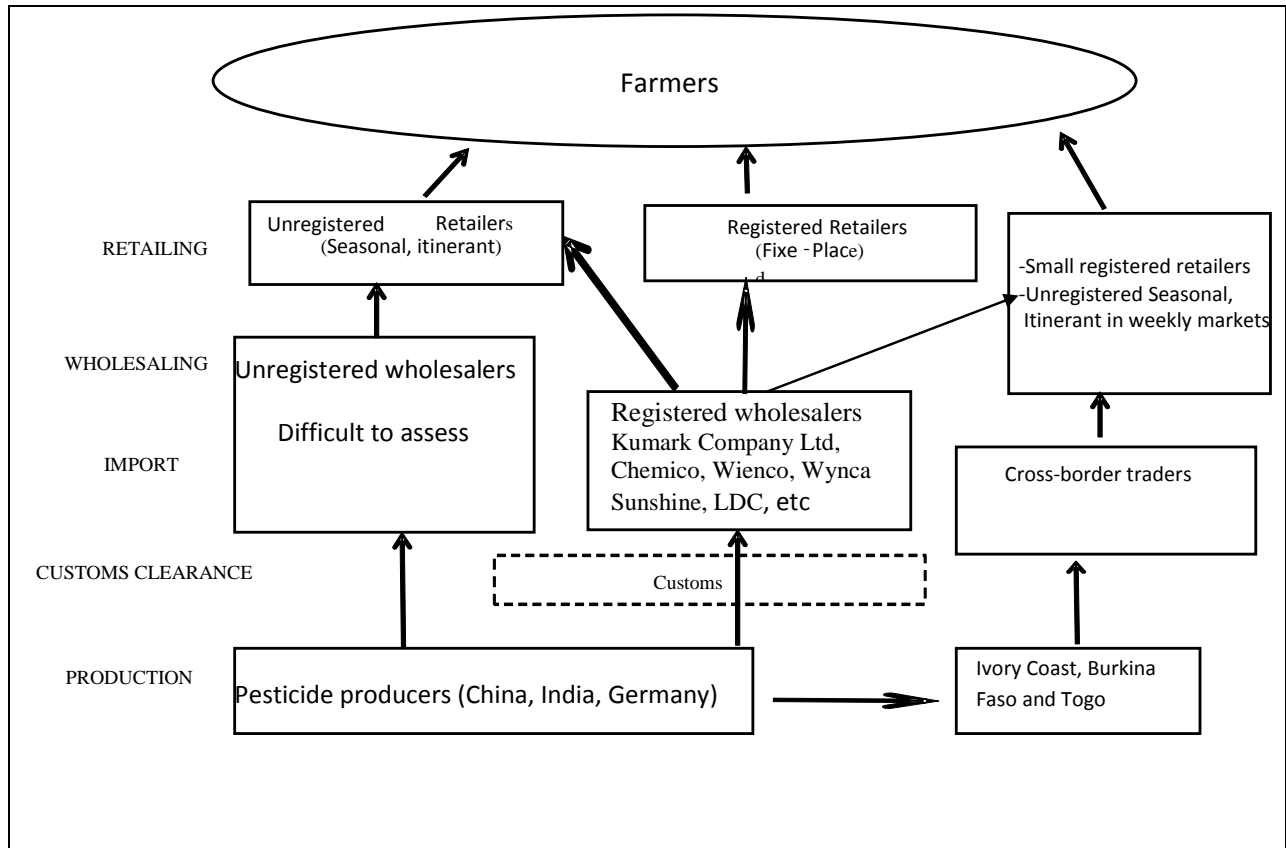
Our farmer's interviews confirmed the results of the LSMS study conducted in 2009 where herbicide comes in the first place among pesticides used in farmland. In Ghana, products containing atrazine and paraquat are allowed by EPA but they are prohibited for use in the CILSS member states. Most of these products are found in CILSS countries and could explain the unofficial importation from Ghana.

Recent evidence suggests that herbicide use in some parts of Africa is reaching significant levels and may be on the rise more generally. In Ghana, recent studies have shown that herbicides were applied on 73% of maize plots, were used by 61% of yam farmers, and represent 44% of all applied chemicals to vegetables. Herbicide use has increased dramatically in Ghana from 4% in 1998 to 55% of farming households in 2013. In Ghana, herbicide use is also higher among younger farmers and in communities that are farther from extension centers, where there are tractors, and where farming is the primary economic activity. The results of these studies suggest that increased use of herbicides is driven by increased awareness, availability and demand by better off commercially oriented households. This often happens in areas where agricultural productivity is rising and where the opportunity cost of labor may be higher. Based on this analysis, herbicide use is expected to increase in areas where agriculture becomes commercial.

Herbicide use rates are generally increasing but vary widely by country, from 1% in Malawi to 55% in Ghana. (Grabowski et al. 2016). Policies to prepare for these changes should include training of farmers on safe and effective application of pesticide and monitoring for contamination in waste supplies (Grabowski et al. 2016).

2.3. Distribution system

Fig. 1 Pesticide Supply System Structure in Ghana



In the past, Chemico in Tema imported active ingredients and formulated pesticide products in its factories. Today these factories do not work and Chemico imports already formulated pesticide and recondition them in its factories. It seems that Wynca Sunshine is planning to build a pesticide formulation plant in the vicinity of Kumasi. At the passage of the mission, it was not possible to visit this factory.

Currently, firms in Ghana do not formulate⁴ pesticides (Table 8). Instead, they import ready-to-use formulations. Ghana's pesticide needs are met by imports which require an import permit issued by EPA. According to the distributors, no pesticide can officially enter the Ghanaian territory without this license. However, the requirements to obtain pesticide import licenses are not difficult to fulfill. This means that the import of pesticides does not require any prior training

⁴ Formulation involves combining premanufactured active ingredients with various additives that improve application, adherence and effectiveness of the pesticides.

of distributors, thus causing a problem at the distributor level. Many distributors are in the industry without any training on pesticides.

According to CropLife, the volume of pesticide imports to Ghana was 2.5 million tons, including a certain amount in transit for Côte d'Ivoire, Burkina Faso and Togo. Mali is not mentioned among these countries, but there are pesticides from Ghana in Mali. This could be introduced through Côte d'Ivoire or Burkina Faso.

During the field mission, we were able to interview 13 of the 20 listed major pesticide importers in Ghana (Table 8). Among these importers, the most cited ones were:

- DIZENGOFF
- LDC
- CALLIGHANA
- SARO
- WYNCA SUNSHINE
- KUMARK TRADING COMPANY
- REMACO
- JUBAILI
- CROPSTAR
- CHEMICO

During our interview with Wienco Agriculture, it was reported that RMG was the first importer of insecticides in Ghana in terms of volume and also the first importer of Glyphosate. It also imports a lot of fungicides. Its product sales in 2015 were of the order of 45 million Ghana Cedi with the breakdown as follows:

- Insecticides: 30 %
- Fertilizer: 25%
- Seeds: 12%
- Glyphosate 10%
- Others: 23%

RMG has nearly 150 licensed distributors throughout the country. It has an office for the registration of its products. This office recruits researchers for the experimentation of RMG products. However, it is surprising that RMG is not cited as an importer.

Kumark imports and distributes annually 60 pesticides containers throughout Ghana. He does not consider himself a retailer. 50 of the imported containers are glyphosate brand Adwummawura. According to him, his imported pesticides amounted to 80 containers (960 tons) in 2015.

Jubaili, an importer and wholesaler of agricultural goods moved to Ghana in 2014. Its main office is in Kano, Nigeria. It imports and distributes pesticides, fertilizers, seeds and sprayers. It imports and distributes 15 to 30 pesticide containers per year. Its pesticides are mainly imported from China, Europe and India.

Some older pesticide importers such as Sefa and Jane Agro Enterprise, listed last in the list of importers (Table 8) and Yaw Owusu Berko Obeck Agro Services Ltd., not listed in Table 8 consider themselves as importers, distributors and retailers in the Ashanti region of Ghana. Their pesticides are imported from China and India. Pesticide prices are lower in China than in India. Their products are sold to farmers, farmers' associations, other users and NGOs on an occasional basis.

Sefa and Jane Agro Enterprise and Obeck Agro Services Ltd are today discouraged by the multitude of stakeholders in the pesticide industry. According to them the entry of pesticides in Ghana is very easy. All you need is a document from EPA and the market is flooded with pesticides.

New importers such as Ganorma Agro-Chemicals Ltd, who started pesticide importation in 2015, from China and Germany, are very enthusiastic. Fifteen years ago, he was a pesticide retailer, then a wholesaler. He is currently an importer, wholesaler and retailer of agricultural inputs: fertilizers, seeds and pesticides. He distributes his products in nearly all districts of Ghana. The main products he distributes are more than 20 brands of glyphosate, mainly sold to more than 80% retailers.

Of the 25 small importers presented in Table 8, some are well known in Mali: Ets Issa Mory DEMBELE Comptoir 2000, Adama West Africa Limited and Rainbow AgroSciences Company Ltd. Table 8 presents also a multitude of permanent distributors such as Makhteshim Agan West Africa, well known in Mali

Table 8. Major producers, importers and distributors of pesticides in Ghana

	Number of firms	Major firms
Local producers	0	None
Major importers (Wholesalers)	20	<ol style="list-style-type: none"> 1. Louis Dreyfus Commodities 2. MPC 3. DTE-Chine 4. SOGEA (Syngenta, Dow AgroSciences, Bayer, AF-Chem) 5. Toguna Agro Industries 6. Dizengoff Ghana 7. Calli Ghana limited 8. Wienco 9. Agrimat Limited 10. Kumark Company Ltd 11. Chemico Ltd 12. Bentronics Productions 13. Sidalco Ltd 14. Wynca Sunshine Agric Product and Trading Co. Ltd 15. Inesfly Africa Ltd 16. Reiss and Co. Ghana Ltd 17. Badu Kaakyire Agrochemical Co.Ltd 18. Adu and Yeboah Enterprise 19. K. Adu Enterprise, Kumasi 20. Sefa and Jane Agro Enterprise, Kumasi
Small importers	25	<ol style="list-style-type: none"> 1. Adama West Africa limited 2. Agro-tropics 3. CIWARA 4. Etablissement Issa Mory DEMBELE- comptoir 5. Jubaili Agrotec Ltd 6. Total Ghana Limited 7. Multi Heif Company 8. Altimate Agrochemicals Company 9. Jingbo Agrochemicals Tech. Gh Ltd 10. Blue Anchor Farms and Enterprise 11. Jayraj Company 12. Vista 2000 Ltd 13. Cama Agro Consult,Accra 14. Rainbow Agrosiences Company Ltd 15. Bon Agro Company 16. Thomhcof Company Ltd 17. Positiveware Trading Company, Accra 18. Kofamob Agro Services , Kumasi 19. Anichesvin Ventures, Kumasi 20. Cropstar Enterprise, Accra 21. PakGhana Co. Ltd, Kumasi 22. West Africa Environmental Sciences Ltd, Accra 23. Affcott Ghana Ltd

		<p>24. Evonik West Africa, Accra Baker 25. Hughes/Tullow Ghana Ltd, Accra</p>
Permanent retailers	40	<ol style="list-style-type: none"> 1. Bon Arrive Supermarket 2. AD and R Enterprise 3. Splendid Agro Products 4. Ocean Trade Ltd 5. Annoh and Sons Enterprise 6. Rachans Enterprise 7. Jem Inter Continental Services 8. Thomas Fosu Enterprise 9. Errands4u C4-68, DTD 10. BBC Industrials Co Ltd 11. Drugmat Ltd 12. Abanark Agro Services 13. Five Continents 14. Kofamob Agro Services 15. Bayer S.A Ghana 16. Newlife Medical Centre 17. Makhteshim Agan West Africa, Accra 18. L'espoir Company Ltd 19. Jingbo Agro Tech. Ghana Co Ltd, Accra 20. Frankatson Limited 21. Anichesvin Ventures, Kumasi 22. Rachans Enterprise, Accra 23. Elvisco Farms Company Ltd Kumasi 24. The Huge Ltd, Accra 25. Annoh and Sons, Accra 26. Natosh Enterprise, Kumasi 27. Premier Steel Limited 28. Splendid Agro Products, Pokuase 29. Jakess Agro Chemicals, Kumasi 30. Dupaul Wood Treatment Ghana Ltd 31. Challux Ltd, Accra 32. Mand K Gh. Ltd, Accra The Candel Company 33. Blue Anchor Farms and Enterprise 34. Miqdadi Company Ltd, Accra 35. Jakess Agrochemical. Kuamsi 36. Aboboyaa Agrochemical 37. WAAF Agro Ltd, Techiman 38. Bon Agro Company, Somanya 39. J.K. Duku Enterprise, Kumasi 40. Spica Ghana Ltd.

Table 9. List of major pesticide sales markets in Ghana

Administrative regions	Major markets (wholesale)	Major markets (retail)
Ashanti	Kumasi, Bekwai	Abinkyi market, Mbrom, Bompata, Pampamso, Fomena, Ejura, Obuasi, Tepa, Konongo Dadiesoaba
Brong Ahafo	Techiman, Sunyani,	Kintampo, Wenchi, Goaso, Berekum,
Eastern	Asamankese, koforidua	Suhum, Nsawam, koforidua, Somanya, Oda
Volta	Ho, Hohoe	Keta Municipal, Kpando, Akatsi, Sogakope
Central	Kosoa, Cape Coast,	Abura, Winneba, Agona Swedru, Assin Fosu, Dunkwa
Northern	Tamale	Aboabu, Tuna, Chereponi, Mile 7, Savelugu, Bole, Bimbila, Yendi, Damongo, Nyankpala, Salaga, Walewale, Tuna, Karaga, Cheriponi, Saboba, Gushegu
Upper West	Wa municipal	Nadowli, Nandom, Hamile, Gwollu, Tumu
Upper East	Bolgatanga	Navrongo, Garu, Zebila, Bawku
Western	Takoradi	Bebiani, Sekondi, Half Assini, Sefwi Wiawso, Akontonbra, Bia, Aowin, Bowdie, Tarkwa, Huni Valley
Greater Accra	Accra, Madina, Tema	Ashiaman, Ada

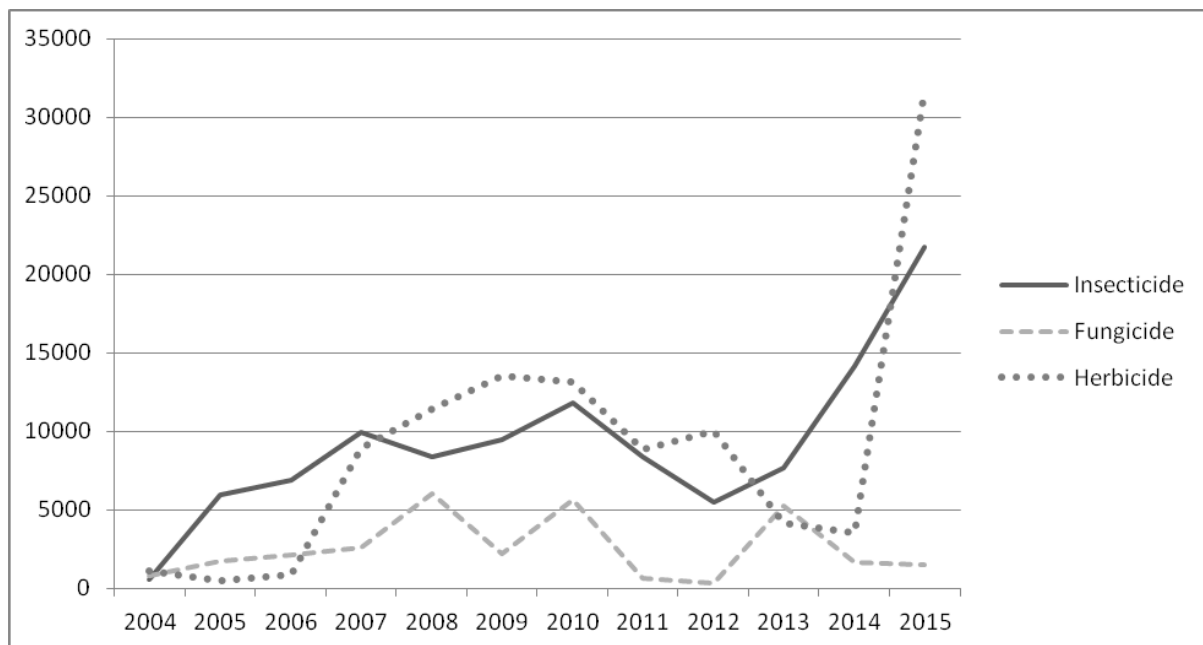
2.4. Markets trends

2.4.1 Trends in volumes of pesticides imported into Ghana

From 2004 to 2015, Ghana imported an average of 9,216 tons of insecticides, 8,986 tons of herbicides and 2,545 tons of fungicides (Appendix 4). From 2004 to 2007, imported herbicides and fungicides were lower than that of insecticides at the same period (Fig 2). From 2007, import of herbicides has increased and exceeded that of insecticides and fungicides and continues to progress with declining imports noticed from 2012 to 2014. The import of fungicides is lower than that of insecticides and herbicides throughout the period 2004 to 2015.

The increase in the importation of herbicides could be explained mainly by the reduction of labor force for agriculture in general and the mastery of the application of plant protection products by farmers. In Ghana, there are trained pesticide applicator brigades that handle the application of pesticides in farmers' land. The pesticide applicators training program was initiated in 2013 with support from CropLife Ghana and to date 2,300 applicators have been trained. This activity is part of CropLife global program on safe use of pesticides. Pesticide applicators are outside the Government. They are villagers who are trained in pesticide application techniques by various Ministry of Food and Agriculture agencies, projects and programmes.

Fig 2. Quantity (tons) of pesticides imported into Ghana from 2004 to 2015



Source: Source: EPA, PPRSD / MOFA, 2015;

2.4.2. Price Trends

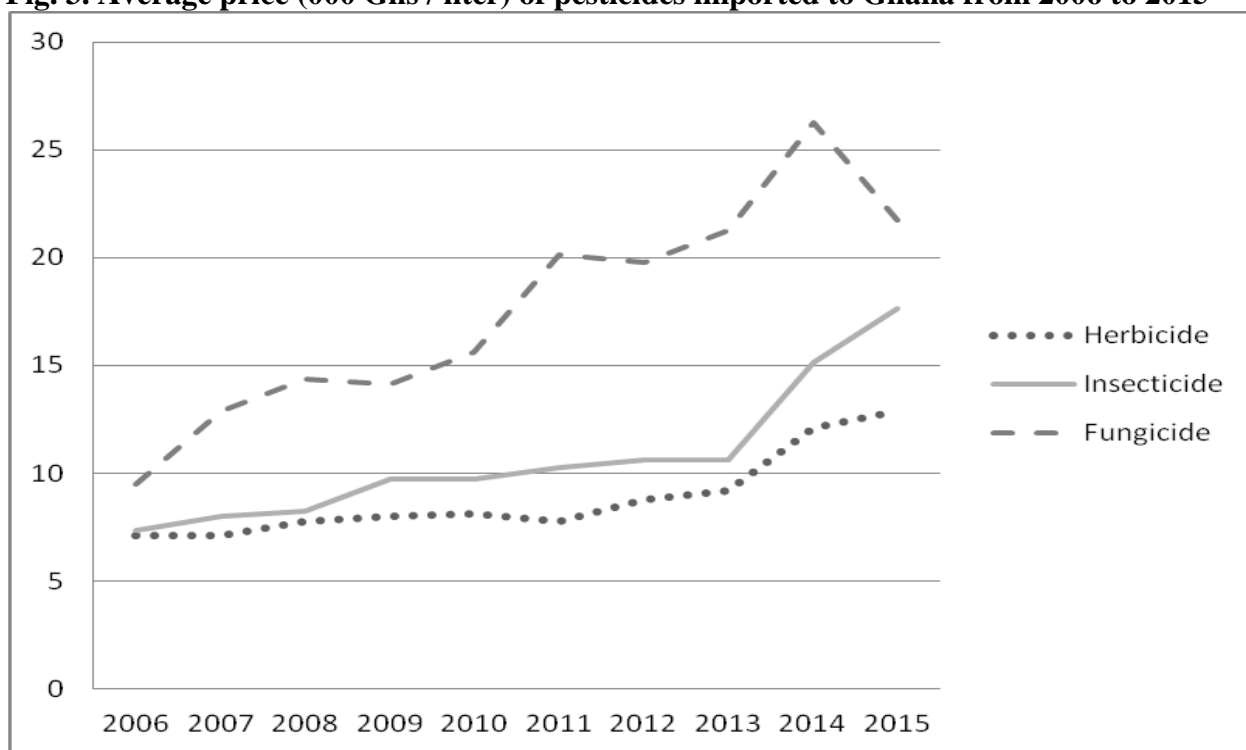
The average import price of pesticides from 2006 to 2015 was 17.56 Cedi per liter for fungicides, 10.74 for insecticides and 8.88 for herbicides (Table 3a). Pesticide import prices are up from 2006 to 2015. Fungicides are the most expensive, followed by insecticides and herbicides are the cheapest (Figure 2).

In the domestic market, the average price of pesticides was 20.39 Cedi per liter for fungicides, 13.18 for insecticides and 10.75 for herbicides (Table 3b). During the period 2006 to 2015, Pesticide prices follow the same trend as import prices (Figure 3).

The 2006 to 2015 profit margin between the local market price and the import price ranges from 2.83 Ghana cedis for fungicides, 2.44 Ghana cedis for insecticides and 1.87 Ghana cedis for herbicides.

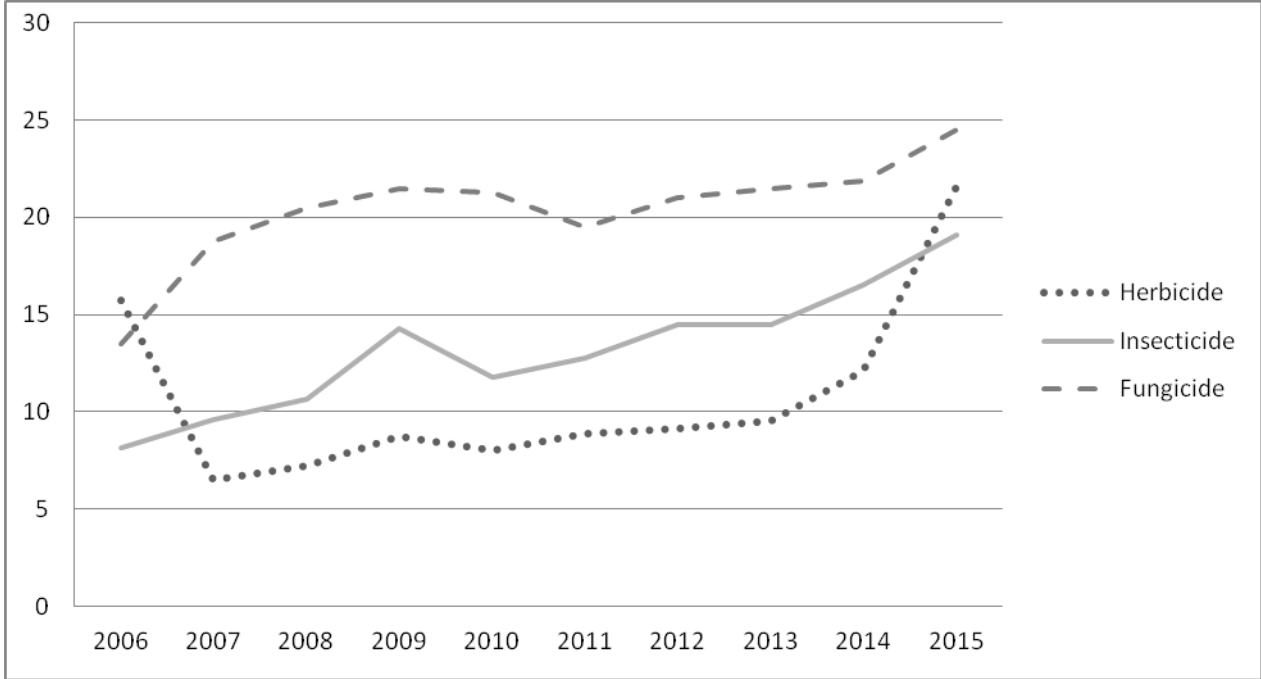
The distributors interviewed did indicate that herbicides were cheaper than insecticides and fungicides. They also indicated a downward trend in the prices of herbicides and insecticides. This downward trend may partly explain the massive importation and use of herbicides. It should also be noted that herbicides: especially non-selective ones are used for the installation of all crops while insecticides and fungicides (especially for seed treatments) are used on specific crops. Herbicides are also used in perennial crops (Cocoa, Oil Palm) to control weeds and facilitate harvesting. Demand is high for countries where rainfall is high : more than 1.500 mm of rain per year.

Fig. 3. Average price (000 Ghs / liter) of pesticides imported to Ghana from 2006 to 2015



Source: Table 3a, field data collected from importers August 2016.

Fig 4. Average price (000 Ghs / liter) of pesticides in the domestic market in Ghana from 2006 to 2015



Source: field data collected from importers August 2016.

3. REGIONAL PESTICIDE POLICIES

3.1. ECOWAS regional pesticide policy

To facilitate the development of agricultural trade, ensure the quality control of the products traded, and realize the 2020 vision of ECOWAS, the ECOWAS Commission through its Directorate of Agriculture and Rural Development has developed, in consultation with other regional organizations (WAEMU and CILSS), several regulations including the Regulation No. C/REG.3/05/2008 on the harmonization of rules governing the approval of pesticides in the region and develop associated implementing regulations (Source: Diarra 2016 Study MSU). The objectives of this pesticides regulation are:

- To protect people and the environment in West Africa against the potential dangers of pesticide uses
- To facilitate pesticide trade within and between member States by applying regionally agreed upon rules that minimize trade barriers
- To facilitate farmers access to good quality pesticides in time and place
- To contribute to the establishment of a favorable environment for private investment in the pesticide industry
- To encourage partnerships between public and private sectors.

The organs of this pesticide regulation are:

- The setup of the West African Committee for Pesticide Registration (WACPR) in order to ensure the implementation of the regulation on behalf of the ECOWAS Commission
- The setup or the revitalization of National Pesticide Management Committee (NPMC) in each Member State for the development of the pesticide sector The NPMC is essentially responsible for pre-registration (experimentation) and post-registration (surveillance)

The management instruments of this pesticide regulation are made of five pesticides lists:

1. List of fully registered (FRE) and provisionally cleared pesticides (PCL)
2. List of severely restricted pesticides;
3. List of pesticides under toxico-surveillance
4. List of prohibited pesticides;
5. List of registered pesticides identified in each Member State.

3.2. Implementation requirements for ECOWAS

At a regional information and exchange workshop on the implementation requirements of ECOWAS pesticide regulation it was recommended that each Member State should:

- Publish Regulations in Official Journals
- Draft and adopt texts complementary to Regulations
- Establish and operationalize national committees (pesticides)
- Prepare and publish the different lists of pesticides
- Implement an Information Strategy on Regulations

- Finalize the action plans related to the implementation of the Regulations (Pesticides)

The second recommendation was to draft and adopt texts complementary to the regional regulations. This requires action by both ECOWAS and the national governments. The ECOWAS commission is responsible for drafting and approving implementing regulations. Subsequently, Ghana and other member states are responsible for preparing supplementary national texts that align with the regional regulations. These national implementing regulations cannot be implemented until the ECOWAS Commission drafts and adopts the governing regional regulatory texts.

The law 490 of the year 1994 regulates pesticide management in Ghana (Table 10). In 1996, the Pesticide Management and Control Act 528 provides for the control, management and regulation of pesticides in Ghana. This Act has now been incorporated in the EPA Act 490. It describes the import procedures, registration, sale and destruction of pesticides in Ghana.

ECOWAS pesticide regulation is well known in Ghana, but it seems that politicians and technical staff regulators do not consult enough to advance the inclusion of the Regional Regulation on pesticides in the National Regulations. In some instances, it appears that participants who attended regional meetings did not fully inform technical staff charged with implementation of regional agreements. In the early years following the 2008 ECOWAS ministerial agreement on regional pesticide regulations, it appears that some operational staff in Ghana resisted implementation of the new regional regulations on the grounds that national systems were working well and that change was therefore unnecessary. Since 2014, however, the political leaders and technical agencies in charge of pesticide regulation have agreed to move forward with national implementation of the regional pesticide regulations.

ECOWAS pesticide regulation is not published in the national gazette. It seems that any law would not be published in the national gazette unless it has been adopted by Parliament.

The different pesticide lists are published in the national gazette. The 2016 national gazette is published in February by EPA. It contains the lists of:

- Fully Registered Pesticides
- Provisionally Cleared Pesticides
- Banned Pesticides

This gazette is published and updated twice a year.

Table 10. Policy chronology: national and regional pesticide regulations

Policy actions	Legal texts	Comments
Establishing the Environmental Protection Council (1974)	NRC Decree 239	On 23 January 1974 the head of state signed NRC Decree 239, establishing the Environmental Protection Council
Harmonization of pesticide management in West and Central Africa (1993) HIP Project	No legal text	HIP project included Benin, Côte d'Ivoire, Ghana, Guinea and Togo. It was expected to add Liberia, Nigeria and Sierra Leone. The harmonization concerned Pesticide Registration instruments (experimental protocols, registration dossier, Labeling, Advertising etc)
The National Environmental Policy (NEP)		NEP is based on a number of principles that aim to ensure that the policy effectively achieves its objectives. These include the use of the most cost-effective means to achieve environmental objectives
Environmental Protection Agency Act, 1994	Act 490	An Act to amend and consolidate the law relating to environmental protection, pesticides control and regulation and for related purposes.
Pesticides Control And Management Act, 1996,	Act 528	An Act to provide for the control, management and regulation of pesticides in Ghana and to provide for related matters. This Act has now been incorporated in the EPA ACT, 1994, Act 490.
Harmonization of Pesticide Registration in West and Africa (ECOWAS Regulation)		This process is currently in discussion in Ghana. EPA is in preparation to lead consultations on the harmonization process. No published Act
EOWAS Pesticide implementing regulations not yet available		EPA and the Attorney Generals Department are currently drafting five (5) legal documents since 2014. These are; <ol style="list-style-type: none"> 1. Draft Pesticide (Advertising) Regulations 2. Draft Pesticide (labeling and Packaging) Regulations 3. Draft Pesticides (Licensing) Regulations 4. Draft Pesticides (Registration) Regulations 5. Draft Technical Guidelines for Pesticides Transportation, Storage and Disposal

4. IMPLEMENTATION OF REGIONAL PESTICIDE REGULATIONS BY GHANA

4.1. Ghana's legal framework

The Environmental Protection Agency Act, 490 of 1994 mainly regulates pesticides in Ghana. This Act does not take into account the regional ECOWAS Regulation on pesticides. The harmonization process with the Regional Regulation of ECOWAS on pesticides started in 2014 and five (5) technical implementation regulations are being developed by EPA and the Attorney Generals Department (Table 9). The rigidity of the parliamentary calendar is a major constraint to the adoption of any regional legal texts in Ghana. One should consider at least 3 years for a legal text to be taken by parliament in Ghana. However, if a political change occurs when a text is entered, the whole process will have to be started again.

It is usually easier to write a new law than to implement it, but in Ghana it seems that the implementation of law is easier than its formulation because new laws are extremely difficult to take.

4.2. Operational implementation of pesticide regulations

4.2.1 Pre-registration

Pre-registration is essentially driven by EPA (Fig. 5). Pesticide import procedures in Ghana for both experimentation and distribution are the responsibility of EPA, which is under the Ministry of Environmental Science and Technology.

EPA is responsible for the licensing of pesticide experiments. Bio-efficacy trials for registration purposes are carried out by public institutes belonging to the CSIR (Council for Scientific and Industrial Research), public universities and private institute belonging to the Cocoa Research Institute in collaboration with the EPA. EPA contracts the testing services with the public or the private institutes. The CSIR remains the largest institution in charge of scientific research in Ghana. At present, the Council exercises control over thirteen institutes where three are involved with conducting experiments for registration of pesticides: CRI (Institute for Crop Research), OPRI (Oil Palm Research Institute) and SARI (Agricultural Research Institute of the Savannas (SARI).

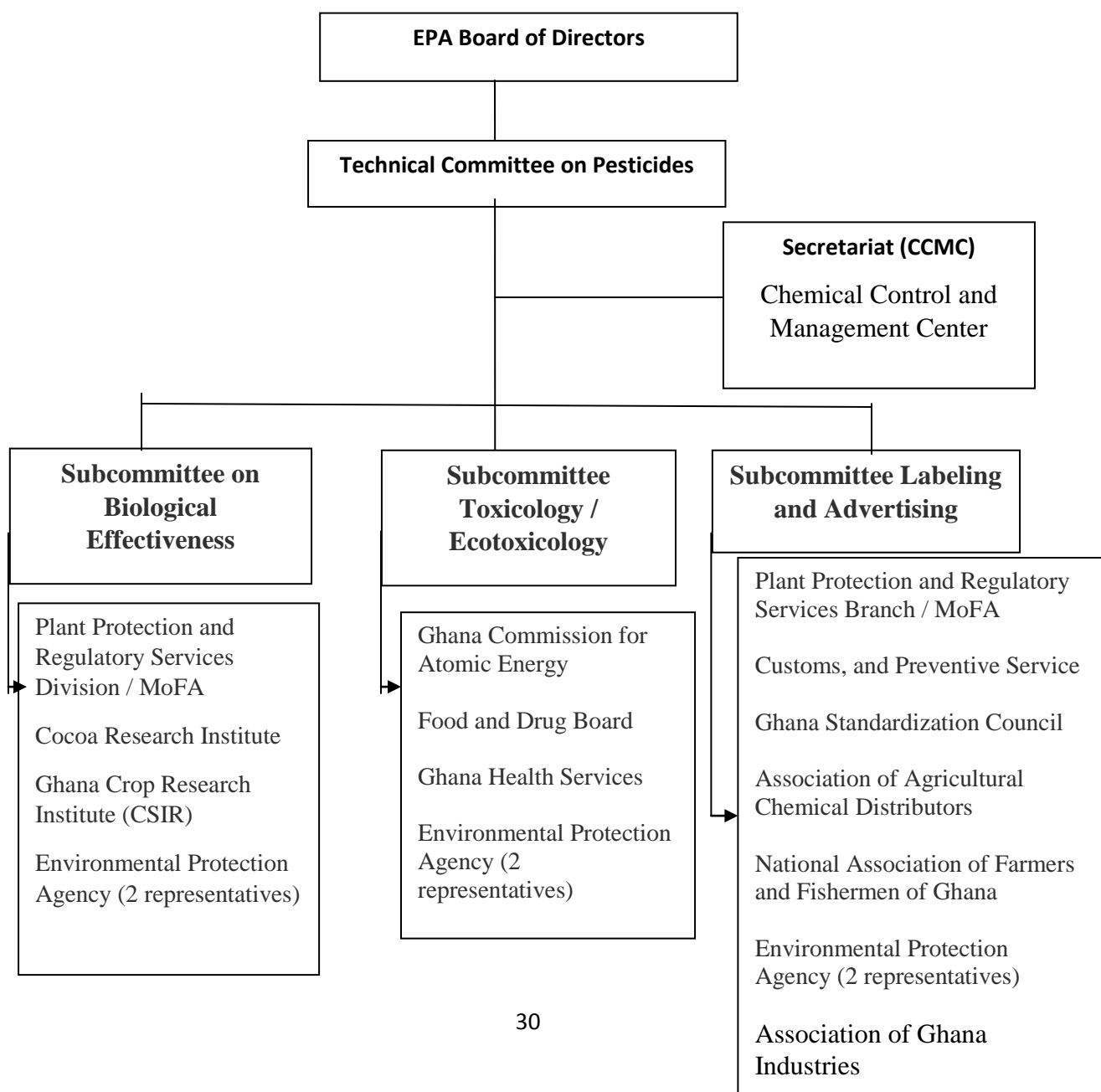
The PPRSD: representing the Ministry of Agriculture is partly responsible for the supervision of field trials. But this task is not systematic because there is no collaboration agreement with EPA and CSIR

4.2.2. Registration

EPA is responsible for pesticide registration in Ghana. The Secretariat of the Pesticide Registration Committee is provided by the Chemical Control and Management Center (CCMC) housed within EPA (Fig. 5). EPA is represented in each of the pesticide registration

subcommittees through two representatives. The PPRSD is a member of the Pesticide Registration Committee and is represented in two subcommittees. The Pesticide Registration Committee meets every 3 months and EPA publishes four times a year the list of fully registered pesticides, those with a Provisional Clearance and those prohibited. That of December 2015 is available and was published in the official gazette Nr 15 of February 8, 2016. Pesticides are registered for duration of 3 years renewable. Pesticides are provisionally cleared for a maximum of one year and the clearance is not renewable. ECOWAS recommend duration of 5 years renewable for fully registered pesticides. Pesticides under Provisional Clearance status are registered for three years and this is not renewable.

.Fig.: 5. Organizational structure of EPA Ghana for the registration of pesticides



The Pesticide Registration Technical Committee reviews pesticide registration applications 4 times a year. Decisions are forwarded to the EPA Board of Directors for approval.

Civil society: the Association of Agricultural Chemical Distributors and the National Association of Farmers and Fishermen of Ghana is well represented on the Pesticide Registration Committee in Ghana, notably on the Labeling and Advertising subcommittee. In other areas of West Africa (CILSS), the Civil Society is not represented in the pesticide registration committee.

4.2.3 Post-registration

According to the law 490 of the year 1994 which regulates pesticide management in Ghana, post-registration activities are the responsibility of EPA. Post-registration activities are carried on the ground by EPA and the PPRSD. This Act describes the import procedures, registration, sale and destruction of pesticides in Ghana. For post-registration activities, thirteen institutions from seven (7) ministries are involved (Table 12). The MoFA Veterinary Services Directorate and the Forestry Research Institute which are not represented on the Pesticide Registration Technical Committee, are involved in post-registration.

The challenges of post-registration activities are:

- illegal operations,
- poor infrastructure,
- lack of training : farmers and dealers
- lack of adequate logistics.

But pesticide inspection focuses on inspection of shops and pesticide dealers. In its farmer training program, the PPRSD focuses on personal protective equipment (PPI) and management of empty containers. The official pesticide quality control services do not play their roles in the implementation of national policy in the ground. This is due to many factors, including:

- The Act 528 taken in 1996

The merger of this Act with the 490 Act was initiated without consultation with key organizations. The PPRSD which is a key body in the implementation of the Pesticides Act in Ghana has submitted requests for the restitution of Law 528, but this has not been done.

Table 11: Implementing structures, regulatory functions and staffing in Ghana

National implementation requirements	Status of implementation in the country, including structures and staffing
1. Pre-registration	
<ul style="list-style-type: none"> • Field testing of pesticides proposed for registration 	<ul style="list-style-type: none"> • The EPA Pesticide Technical Committee (PTC) is responsible for evaluating all field-based efficacy trials for all pesticides proposed for sale in Ghana and this is usually practically and effectively done through its sub-committee on Bio-efficacy which is made up of experts from diverse backgrounds. These include MoFA, Research institutes.
<ul style="list-style-type: none"> • Establish the Environmental Protection Agency (now Environmental Protection Authority (EPA)) 	<ul style="list-style-type: none"> • Established in 1994 by ACT 490 • The Board and its technical committees meet quarterly (38 meetings so far)
2. Registration	
<ul style="list-style-type: none"> • EPA approves or disapproves pesticides 	<ul style="list-style-type: none"> • In Ghana, the EPA Board approves or disapproves pesticides based largely on results of field trials and dossiers submitted to the committee for verification.
3. Post-registration	
<ul style="list-style-type: none"> • register and monitor traders eligible to sell pesticides 	<ul style="list-style-type: none"> • EPA is mandated by law to registers all pesticide products brought into Ghana. This is largely carried out. • EPA also has a register of all registered pesticides dealers in Ghana. There is also some unregistered traders who sell pesticides in Ghana
<ul style="list-style-type: none"> • market monitoring to verify that traders sell only registered pesticides, verification of labeling and product expiration dates 	<ul style="list-style-type: none"> • EPA and PPRSD inspectors carryout periodic monitoring of Pesticide dealer shops to determine pesticide distribution and trade activities throughout the country to ensure enforcement of the EPA Act 490. The staff in 2013 included : EPA/CCMC 15 B.Sc Environmental Science MOFA/PPRSD 25 Cropscience ; Environmental Science • Limited travel and enforcement budget • limited capacity to store seized products • There is a comprehensive list of registered and provisional clearance products published by EPA annually.
<ul style="list-style-type: none"> • test active ingredients and product quality 	<ul style="list-style-type: none"> • No capacity, no testing conducted in Ghana. Some importers like RMG conducts some tests abroad through their manufacturers
<ul style="list-style-type: none"> • monitor environmental impact 	<ul style="list-style-type: none"> • EPA carries out environmental impact assessments on products. These are largely done through projects whose activities include pesticide use
<ul style="list-style-type: none"> • monitor impact on human health 	<ul style="list-style-type: none"> • The national poison center located at the Ridge Hospital in Accra does periodic poison checks and also liaises with projects to fund some monitoring activities.

Table 12: Institutions involved in control and pesticides management in Ghana

Institutions and / or Services	Ministries concerned	Specific roles
Environmental Protection Agency (EPA)	Ministry of Environment, Science and Technology	Implementation of pesticide legislation in Ghana Issues import permits Delivers experimental license Coordinates bio-efficacy field trials Coordinates pesticide registration (all phases of pesticide registration)
Plant Protection and Regulatory Services Division (PPRSD)	Ministry of Food and Agriculture (MoFA)	Responsible for training farmers and pesticide suppliers on safe use and providing pesticide inspectors for the implementation of the provisions of the Pesticides Act in Ghana Intervenes in bio-efficacy tests Controls distributors and markets for pesticides
Crop Research Institute (CRI) Agricultural Research Institute of the Savannas (SARI)	Council for Scientific and Industrial Research (CSIR)	Evaluation of the biological effectiveness of pesticides on crops
OPRI (Oil Palm Research Institute)	Council for Scientific and Industrial Research (CSIR)	Evaluation of the biological effectiveness of pesticides on oil palm
Cocoa Services Division COCOBOD	Ministry of Finance	Control and management of cocoa pesticides Evaluation of the biological effectiveness of pesticides on cocoa
Department of Chemistry, National Institute for Nuclear Research, Ghana Atomic Energy Commission	Ministry of Environment, Science and Technology	Analysis of pesticide quality
Ghana Standards Council	Ministry of Commerce	Control of pesticide quality and residue analysis
Customs, and Preventive Service	Ministry of Commerce	Control the import of unregistered pesticides
Forestry Research Institute	Ministry of Lands and Natural Resources	Responsible for pesticides used for the treatment of wood
Directorate of Veterinary Services of MoFA	Ministry of Food and Agriculture (MoFA)	Pesticides used for veterinary purposes
Health services in Ghana	Ministry of Health	Pesticides used for the control of disease vectors and for public health in general
National Association of Farmers and Fishermen of Ghana	Ministry of Employment and Social Welfare	Ensure availability of safe and effective pesticides for agriculture
Association of Industries in Ghana	Ministry of Employment and Social Welfare	Represent the interests of the pesticide industry
CropLife Ghana	Ministry of Employment and Social Welfare	Advocacy for improved control and management of pesticides, training of pesticide traders

Source: Toé A. 2013)

4.3. National implementation of regional pesticide regulations

Ghana has not yet begun to implement regional pesticide regulations. The government, however, has set up a national task force to institute necessary legal, regulatory and institutional changes. Prior work by Ghana's seed and fertilizer task forces have completed and submitted necessary legislation to Parliament, permitting national implementation of these two regional agricultural input agreements. However, work on pesticides has proceeded more slowly. Currently, technical staff at Ghana's EPA are working with ECOWAS and CILSS to draft the legal and regulatory instruments necessary to establish a national pesticide committee and full complement of harmonized local regulations.

Ghana's efforts depend, to some extent, on prior technical decisions and implementing actions by ECOWAS, including the operational establishment of the regional Committee for West African Pesticide Registration (CWAPR). As a result, Ghana's national implementing regulations cannot be implemented until the ECOWAS Commission drafts and adopts the governing regional regulatory texts and operationalizes the proposed regional pesticide bodies.

5. CONCLUSIONS

Market trends

The results of this study indicate that the import of pesticides into Ghana is clearly increasing. The same is true for the increased use of pesticides mentioned in other studies. Factories that once formulated pesticides saw their activities reduced to mere repackaging. As a result, Ghana imports all of its pesticide requirements. New companies such as Wynca Sunshine intend to formulate pesticides on site in the near future. The market for pesticides in Ghana is a thriving market given the number of pesticides sold and the number of actors involved in the sector. It is safe to say that Ghana is a pesticide reservoir for the West African sub region. The number of glyphosate brands encountered in Ghana is significantly higher than in the other countries of this study, with the exception of Nigeria. However, in spite of this flourishing market, some former operators of the sector (those of 1980) saw their activities reduced due to problems of importation of poor quality products and also by the simplicity of acquisition of import license of pesticides. This poses risks to human, animal and environmental health. On the other hand the new operators are very dynamic and invest extensively in the import of pesticides mainly from China and India. This does not mean that pesticides imported from China or India are of poor quality but that quality is a function of the customer's resources.

Implementation of regional policies

In the framework of the implementation of Regulation C / REG.3 / 05/2008 on the harmonization of the rules governing the registration of pesticides in the ECOWAS region, EPA has published in 2013 the list of specific ECOWAS protocols for the evaluation of the biological effectiveness of pesticides: Insecticides, acaricides, herbicides, fungicides and bactericides. Since 2014, five (5) technical implementation regulations are being developed by EPA and the Attorney Generals Department.

One can conclude by stating that the implementation of the ECOWAS Regulation on pesticides is not effective in Ghana yet but some implementation documents are being drafted.

Main factors affecting the national implementation of regional policies agreed

The rigidity of the parliamentary calendar is a major constraint to the adoption of any regional legal texts in Ghana. According to several pesticide experts, one should consider at least 3 years for a legal text to be taken by parliament in Ghana. However, if a political change occurs when a text is entered, the whole process will have to be started again. It is usually easier to write a new law than to implement it, but in Ghana it seems that both the implementation of law and the formulation of new laws takes time.

Key implementation problems

The results of this study indicated several implementation problems such as:

- Insufficient staff, logistics and funds for post-registration surveillance

There is insufficient staff and insufficient logistics to monitor pesticide activities on the ground. There is insufficient funding for public awareness programs for farmers and the general public and for pesticide inspectors to monitor fields after registration. The inspectors do not have all the capacity to apprehend fraudsters. The Plant Protection and Regulatory Services Division (PPRSD), responsible for training farmers and pesticide suppliers on safe use and providing pesticide inspectors for the implementation of the provisions of the Pesticides Act in Ghana does not have enough staff, equipment and funds to fulfill its mission.

- No existing national committee on pesticides

In Ghana, there is a Pesticide Registration Committee under the responsibility of EPA. This committee meets regularly four times a year and is very active in the registration of pesticides. Apart from this Committee, there is no National Pesticide Management Committee. All pesticide management activities are coordinated by EPA.

- Pesticide quality control laboratories

There are inadequate facilities for the analysis of pesticide quality control and this makes it difficult to prosecute pesticide traders selling falsified pesticides.

- Toxicological information center

There is currently only one toxicological information center at the Ridge Hospital in Accra. However, the center is currently not functional. (Toe 2013)

Recommendations for improvement

In order to improve the management of pesticides in Ghana, many avenues must be considered, including

- Better control of the pesticide registration process. Better regulate the import and sale of pesticides. All pesticide importers and dealers must be well trained before being permitted to trade in pesticides.
- Control the quality of pesticides at import and on the market. It is not unusual to see the existence of counterfeit or under-dosed products on the market. The construction of a new site for EPA including a pesticide control laboratory is planned outside of Accra. It is advisable to continue this project of building these infrastructure with a view to improving the quality of pesticides in Ghana
- Emphasize training of farmers and pesticide suppliers on safe use of pesticide
- Monitor environmental impact of pesticide on a regular basis.

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Appendix 1. List of localities, structures and people interviewed

Date	City	Contacts	Comments
15 08 2016	Accra	Joseph Edmund Environmental Protection Agency (EPA) Chemicals Control and Management Centre P.O. BOX M326 Accra - Ghana	Pesticide Regulatory Structure Issuance of approvals to importers, wholesalers and pesticides retailers Documents available <ul style="list-style-type: none"> • <u>Ghana Gazette Published by Authority N° 15 Monday, 8th February 2016, EPA Ghana p.773 – 818</u> (A) Fully Registered Pesticides (FRE) (B) Provisionally Cleared Pesticides (C) Banned Pesticides • Summary of Register of Pesticides as at 31st December 2015 • <u>EPA Framework and Specific Protocols for the Biological Evaluation of Insecticides and Acaricides on Selected Crops Grown in West Africa December 2013 166 p.</u> • <u>EPA Framework and specific protocols for the biological efficacy evaluation of herbicides, fungicides and bactericides on selected crops grown in West Africa December 2013 75 p.</u>
15 08 2016	Accra	James ZHANG Assistant Director / Marketing Manager Wynca Sunshine Agric Prod & Trad Co. (Ghana) Ltd Off dadeban road, opp. Nissan auto parts North industrial area, Accra Ghana Mob. +233-(0)26 1515 457 (GH) +86-1364 6858 798 (CHN) E-Mail: 253160036@qq.com Website: www.wynca.com	Big pesticide Importer Pesticide Formulator?
16 08 2016	Tamale	Plant Protection and Regulatory Services (PPRSD) Northern Region	Pesticide Regulation Monitoring Structure at the Local Level and Support to farmers

		<p>Christopher Y AKU Regional Pesticides Fertilizers and Seeds Inspector Tamale Tel: 026 1370 930 E-mail: crispinjessica244@gmail.com</p> <p>Afranie Michael KWAME Regional Pesticides Fertilizers and Seeds Inspector Tamale Tel: 054 2846 508 / 020 5514 955 E-mail: afraniem@yahoo.co.uk</p>	
16 08 2016	Tamale	<p>Alhaji A. Ganiyu Sulemana Chief Executive Officer Ganorma Agro-chemicals Ltd P.O. Box TL 2206 Tamale Northern Region Tel : Office : 03720-27732 Mobile : 0244-845995 / 020-8773451 / 026-2979999 E-mail: aganorma@yahoo.com</p>	Importer and distributor of pesticides
16 08 2016	Tamale	<p>Issa WUMPINI Wumpini Agro Chemical</p>	Local pesticide distributor
16 08 2016	Tamale	<p>Baoua Issa Zet-Agrochemicals</p>	Local pesticide distributor
17 08 2016	Tamale	<p>Location : Nabogu (District Savelugu Nanton) Région du Nord Paysans : Safianu Harnna (Homme) Abdul-Wahab Sambo (Homme) Damata Abdulahi (Femme)</p>	Farmers users of pesticides

		Nasaa Amos (Femme) Razak Issah (Homme)	
17 08 2016	Tamale	Location : Duko (District Savelugu Nanton) Région du Nord Paysans : Issa Mohamed Saani (Homme) Alhassan Fuseini (Homme)	Farmers users of pesticides
17 08 2016	Tamale	Mohamed Hadi Seydou Hadiola Agro-Chemicals Location Chogu Yapelsi, Sagnangu District E-mail: hadiolaagro@gmail.com	Local pesticide distributor
18 08 16	Kumasi	Kumasi Région Ashanti Visite de courtoisie au bureau du Directeur Régional de PPRSD Joseph Yeng Faalong Directeur Régional E-mail : joefaalong2013@gmail.com Godson Tettey Regional Officer PPRSD Benjamin Taw Ayim Assistant	Pesticide Regulation Monitoring Structure at the Regional Level and Support to farmers
18 08 2016	Kumasi	Obeck Agro Services Ltd Dealer In Agric Inputs Yaw Owusu Berko Managing Director P.O.Box SE 1103, Suame – Kumasi Tel. +223 51 26943 / 47646 Mob. 0244 822843 / 020 8210781 E-mail : obekagro@africaonline.com.gh E-mail : obekagro@4u.com.gh Website : www.obekagro.com	Importer and distributor of pesticides and veterinary products
18 08 2016	Kumasi	SEFA & JANE AGRO CHEMICAL LTD Sefa Boakye Chief Executive Officer Lake Road, Adum P.O. Box 342	Importer and distributor of pesticides and seeds

		<p>Tel: +233 51 33622 / 80797 Mob: +233 244 268508</p>	
19 08 2016	Kumasi	<p>Nasir Hussain Jubaili Ltd Agrotec Mobile : +233 540 12 12 24 E-mail : Nassir.hussain@jubailiagrotec.com Nkoransa off Obuasi Rd. Kumasi (Near Friends Eye Centre</p> <p>Nigeria Head Office Kano Ali Sulemana Km 10 Hadejia road, Gunduwawa District, Kano Tel: 064 970452 / 927301 Mobile : 0806 4646484 Site : www.jubailiagrotec.com</p>	Big pesticide Importer
19 08 2016	Kumasi	<p>CROPSTAR ENTERPRISE PO Box KS 5285 Locations : OPP Kumasi ZOO Main Gate and Mmrom Near St-Louis College of education</p>	Importer and distributor of pesticides Sale promotion of Glystar
19 08 2016	Kumasi	<p>Kumark Agro Company Ltd Frank Adjei General Manager Location : Opp. Techiman / Wenchi Station Old Race Course Kumasi P.O. Box SE 094, Suame-Kumasi Mob. +233(0)244 153 869 +233(0)207 479 270 E-mail : frank.adjei@kumark.com Web : www.kumarkkgh.com</p>	Big importer and distributor of pesticides

19 08 2016	Kumasi	NYAMTI ADUM COMPANY	Distributor of pesticides
22 08 2016	Accra	Plant Protection and Regulatory Service Directorate (PPRSD) Augustine Mensah Directeur Ernest Osei Assibey Eric Ozimado Adisatu Alhassan Samuel Nana Siaw Okyere	Pesticide Regulation Monitoring Structure at the Regional Level and Support to farmers
22 08 2016	Accra	Benjamin M. Adjei Assistant au Représentant de la FAO (Programmes) FAO Ghana No. 69 Isert Road, North Ridge, P.O. Box GP 1628, Accra – Ghana Tél. (+233) 302 610930 Ext. 42200 Mob: (+233) 243 562149 E-mail : Benjamin.Adjei@fao.org Website : www.fao.org/africa	Harmonization of needs at national level
23 08 2016	Accra	Frederick Brandford Boampong Program Manager CropLife Ghana 666/14 Nii Noi Kwame street Dzorwulu, Accra Tel: +233 (0) 24-427 3075 E-mail: fredminkab@gmail.com E-mail: fredminkab@yahoo.com E-mail: croplifeghana@yahoo.com Skype : fboampong	Association of plant industry in Ghana <u>Document available</u> <ul style="list-style-type: none"> • Directory of Ghana Agri-input dealers : Agra /IFDC Updated version 2012 222 pages
23 08 2016	Accra	WIENCO Agriculture Ken Addy Roland Nii Ayi Quaye	Development of technological packages for crop production and protection

		<p>Head of Business RMG Ltd N° 14 Narku Ipan Road, near Nyaho Clinic, Airport Residential Area P.O. Box 7593, Accra – North Tel. +233 – 302- 772251, Mob. +233 – (0) 544 338 526 E-mail : roland.quaye@rmgconcept.com Web : www.rmgconcept.com</p> <p>Peter Ampofo, Country Manager – Ghana, Liberia Bayer Cropscience Bayer West-Central Africa S.A., Ghana Rep Office Crop Management West & central Africa N°6 Motorway Extension, 1st Floor Apex Square, Dzorwulu KA PMB 177 Airport, Accra-Ghana Tel. +233 302 823 109 Mob. +233 544 341 913/ 307 038 168 E-mail : peter.ampofo@bayer.com Web : www.bayer.com</p>	
23 08 2016	Tema	<p>CHEMICO Limited Prince Agyemang Yeboah P.O.Box CO.950 Obedeka Road Comm,1 Ind.Area Tema, Ghana Tel. (0303) 202991/2,202345,206548 E-mail: chemico@chemicogh.com</p> <p>Winfred Tse Obeng Adzina Gregory Amprofi</p>	<p>Possible pesticide formulator Importer of pesticides brands Local pesticide conditioner</p>

Appendix 2. List of registered pesticides in Ghana (February 2016)

Appendix 2.1 Insecticides

No.	Product Name	WHO Class	Firm Registering Pesticide	Local Distributor (s)	Active Ingredient (s)	EPA Registration Number	Uses
1.	Aceta Star EC	II	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Bifenthrin (30g/l) + Acetamiprid (16g/l)	FRE/15100/00914G	Insecticide for the control of capsids in cocoa
2.	Actellic 300CS	III	Calli Ghana Co. Ltd., Tema	Calli Ghana Co. Ltd., Tema	Pirimiphos-methyl (300g/l)	FRE/1406/00811G	Insecticide for public health purposes
3.	Actellic Gold Dust	III	Calli Ghana Ltd	Calli Ghana Ltd	Pirimiphos-methyl 16g/kg + Thiamethoxam 3.6g/kg)	FRE/1506/00920G	Insecticide for control of <i>sitophilus zeamais</i> in stored maize
4.	Actforce 48EC	II	Jubaili Agrotec Ltd, Accra	Jubaili Agrotec Ltd, Accra	Chlorpyrifos-ethyl (48%)	FRE/15145/00940G	Insecticide for the control of insect pests in rice, cotton, vegetables and citrus
5.	Agro-thoate 40EC	II	Reiss & Co. Ghana Ltd., Accra	Reiss & Co. Ghana Ltd., Accra	Dimethoate (400g/l)	FRE/1310/00602G	Insecticide for the control of insect pests in vegetables
6.	AkateMaster EC	II	Chemico Ltd, Tema	Chemico Ltd, Tema	Bifenthrin (27g/l)	FRE/1405/00683G	Insecticide for the control of capsids and insect pests in cocoa
7.	Alphacep 10 SC	III	Agrimat Limited, Accra	Agrimat Limited, Accra	Alpha-cypermethrin (100 g/l)	FRE/1502/00935G	Insecticide for the control of insect pest in vegetables and fruit

							crops
8.	Alti-pyrifos 48EC	II	Altimate Agrochemicals Company Limited, Accra	Altimate Agrochemicals Company Limited, Accra	Chlorpyrifos-ethyl (480g/l)	FRE/13121/00663G	Insecticide for the control of insect pests of field crops and for public health
9.	Aquatain AMF	IV	Dizengoff Ghana Limited, Accra	Dizengoff Ghana Limited, Accra	Polydimethylsiloxane (754g/l)	FRE/1308/00621G	Insecticide for the control of larvae and pupal stages of mosquitoes
10.	Ateco Super 25EC	II	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Pirimiphos-methyl (250g/l)	FRE/1543/00867G	Insecticide for the control of insect pests in stored cereals, cowpea and soybean
11.	Atom Super 50SC	II	Dizengoff Ghana Limited	Dizengoff Ghana Limited	Thiamethoxam (30g/l) + Deltamethrin (20g/l)	FRE/1308/00619G	Insecticide for the control of insects and mites in vegetables and fruit crops
12.	Attack 1.9EC	II	Agrimat Limited, Madina, Accra	Agrimat Limited, Madina, Accra	Emamectin Benzoate (1.9%)	FRE/14104/00723G	Insecticide for the control of insect pests in vegetables
13.	Aventall 300WG	III	Jingbo Agrochemicals Tech. Gh. Co. Ltd., Accra.	Jingbo Agrochemicals Tech. Gh. Co. Ltd., Accra.	Indoxacarb (300g/kg)	FRE/15139/00893G	Insecticide for the control of insect pests in fruits, vegetables, rice and cotton

14.	Aweradlamp 2.5EC	III	Blue Anchor Farms and Enterprise, Accra	Blue Anchor Farms and Enterprise, Accra	Lambda-cyhalothrin (2.5%)	FRE/14146/00701G	Insecticide for the control of insect pests in vegetables and horticulture crops
15.	Betallic Super	II	Bentronic Productions, Kumasi	Bentronic Productions, Kumasi	Pirimiphos methyl (400g/l) + Permethrin (75g/l)	FRE/1425/00790G	Insecticide for the control of insect pests in maize and cowpea
16.	Bextoxin	II	Bentronic Productions, Kumasi	Bentronic Productions, Kumasi	Aluminium Phosphide (57%)	FRE/1425/00776R	Insecticide for the control of pest in stored grains
17.	Black Mosquito Coil	III	Jayraj Company Ltd, Accra	Jayraj Company Ltd, Accra	Dimefluthrin (0.03%)	FRE/1441/00714G	Insecticide for the control of mosquitoes
18.	Blast 60EC	IV	Dizengoff Ghana Ltd, Accra	Dizengoff Ghana Ltd, Accra	Acetamiprid (3%) + Lambda-cyhalothrin (3%)	FRE/1308/00582G	Insecticide for the control of insect pests in vegetables and fruit crops
19.	Bomec EC	II	Louis Dreyfus Commodities Ghana Ltd, Tema	Louis Dreyfus Commodities Ghana Ltd, Tema	Abamectin (18g/l)	FRE/1555/00881G	Insecticide for the control of aphids, caterpillars, whiteflies, grasshoppers and bollworms in vegetables and fruits

20.	Bonlambda 2.5EC	II	Bon Agro Company Limited, Somanya	Bon Agro Company Limited, Somanya	Lambda-cyhalothrin (25g/l)	FRE/15149/00937G	Insecticide for the control of aphids, whiteflies, weevils, mealybug and fruitflies in vegetables
21.	Buffalo Supa 40EW	III	Thomhcof Company Limited, Kumasi	Thomhcof Company Limited, Kumasi	Acetamiprid (400g/l)	FRE/1323/00593G	Insecticide for the control of insect pests in vegetables and fruit crops
22.	Bypel 1	II	Abnark Agro Services, Kumasi	Abnark Agro Services, Kumasi	Perisrapae Granulosis Virus + Bacillus thuringiensis	FRE/13133/00648G	Bio-insecticide for the control of whiteflies and worms in vegetables, fruits and other crops
23.	Callifan Super 200SC	II	Calli Ghana, Tema	Calli Ghana, Tema	Acetamiprid (100g/l)+Bifentrin (100g/l)	FRE/1506/00930G	Insecticide for the control of mirids in cocoa
24.	Carbodan	II	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Carbofuran (3%)	FRE/1543/00866G	Insecticide / nematicide for the control of nematodes in vegetables
25.	Caweperthrin	II	Blue Anchor Farms and Enterprise, Accra	Blue Anchor Farms and Enterprise, Accra	Cypermethrin (1%)	FRE/14146/00702G	Insecticide for the control of insect pests in vegetables and fruits

26.	Celphos P	II	Reiss & Co. Ghana Ltd, Accra	Reiss & Co. Ghana Ltd, Accra	Aluminium Phosphide (57%)	FRE/1310/00601R	Insecticide for the control of insect pests in stored grains
27.	CeraTrap	U	Dizengoff Ghana Ltd., Accra	Dizengoff Ghana Ltd., Accra	Hydrolyzed proteins (5.5% w/w)	FRE/1408/00823G	Fruit fly attractant
28.	Chemaprid 88EC	II	Chemico Ltd, Tema	Chemico Ltd, Tema	Cypermethrin (72g/l) + Acetamiprid (16g/l)	FRE/1305/00595G	Insecticide for the control of insect pests in vegetables and horticultural crops
29.	Condifor Super	II	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Imidacloprid (20%)	FRE/1543/00872G	Insecticide for the control of insect pests in vegetables
30.	Condor SL	II	Bentronics Productions, Kumasi	Bentronics Productions, Kumasi	Imidacloprid (20%)	FRE/1425/00777G	Insecticide for the control of insect pests in vegetables
31.	Conpyrifos 48EC	II	Five Continents, Accra	Five Continents, Accra	Chlorpyrifos-ethyl (480g/l)	FRE/1578/00915G	Insecticide for the control of scale and borers in cereals and vegetables
32.	Conquer Super 2.5EC	II	Kofamob Agro Services Ltd, Kumasi	Kofamob Agro Services Ltd, Kumasi	Lambda-cyhalothrin (25g/l)	FRE/1365/00560G	Insecticide for the control of insect pests in vegetables and pulses
33.	Consider Super 200SL	II	Thomas Fosu Enterprise, Accra	Thomas Fosu Enterprise, Accra	Imidacloprid (200g/l)	FRE/1390/00548G	Insecticide for the control of insect pests in

							vegetables
34.	Contihalothrin 2.5EC	II	Five Continents, Accra	Five Continents, Accra	Lambda-cyhalothrin (25g/l)	FRE/1578/00916G	Insecticide for the control of insect pests in vegetables and pulses
35.	Conti-zol 50EC	II	Five Continents, Accra	Five Continents, Accra	Diazinon (50%)	FRE/1578/00917G	Insecticide for the control of pests in vegetables
36.	Control 5WDG	II	Agrimat Limited, Accra	Agrimat Limited, Accra	Emamectin benzoate (5%)	FRE/14104/00720G	Insecticide for the control of aphids, worms and borers in vegetables
37.	Cydim Super EC	II	Agrimat Limited, Accra	Agrimat Limited, Accra	Dimethoate (400g/l) + Cypermethrin (36g/l)	FRE/14104/00719G	Insecticide for the control of aphids, caterpillars, whiteflies, grasshoppers, bollworms in vegetables
38.	Cymethoate Super EC	II	Chemico Limited, Tema	Chemico Limited, Tema	Dimethoate (400g/l) + Cypermethrin (36g/l)	FRE/1405/00686G	Insecticide for control of aphids, caterpillars, whitefly, grasshoppers, bollworms in vegetables and cotton
39.	Cypadem 43.6EC	II	Wynca Sunshine Agric Products & Trading Co. Ltd., Accra	Wynca Sunshine Agric Products & Trading Co. Ltd., Accra	Dimethoate (400g/l) + Cypermethrin (36g/l)	FRE/1357/00635G	Insecticide for the control of insect pests in vegetables and field crops
40.	Cypercan	II	Errands4u, C4 - 68, DTD, Madina, Accra	Errands4u, C4 - 68, DTD, Madina, Accra	Cypermethrin (1%)	FRE/14147/00707G	Insecticide for the control of insect pests in vegetables and fruits

41.	Cypasect super	II	Bentronics Productions, Kumasi	Bentronics Productions, Kumasi	Dimethoate (400g/l) + Cypermethrin (36g/l)	FRE/1425/00779G	Insecticide for the control of aphids, caterpillars, whiteflies, grasshoppers and bollworms in vegetables
42.	Cyperdim EC	II	Kurama Company Limited, Accra	Kurama Company Limited, Accra	Dimethoate (250g/l) + Cypermethrin (35g/l)	FRE/1416/00769G	Broad spectrum insecticide for the control of pests in fruits and vegetables
43.	Cypex Maxi Smoke Generator	II	Agrimat Limited, Madina, Accra	Agrimat Limited, Madina, Accra	Potassium chlorate (20% w/w) + Cypermethrin (13.5% w/w)	FRE/14104/00724G	Insecticide for general indoor disinfection
44.	D-Ban Super 48EC	II	Kumark Company Ltd, Kumasi	Kumark Company Ltd, Kumasi	Chlorpyrifos (48%)	FRE/1543/00869G	Insecticide for the control of insect pests in vegetables
45.	Dean 62EC	II	Louis Dreyfus Commodities Ghana Ltd, Tema	Louis Dreyfus Commodities Ghana Ltd, Tema	Imidacloprid (50g/l) + Emamectin benzoate (12g/l)	FRE/1355/00571G	Insecticide for the control of insect pests in vegetables
46.	Deltacan	III	Errands4u, C4 - 68, DTD, Madina, Accra	Errands4u, C4 - 68, DTD, Madina, Accra	Deltamethrin (1.5%)	FRE/14147/00708G	Insecticide for the control of insect pests in vegetables and fruits and for public health
47.	Decis 100EC	II	Bayer S.A, Ghana	Bayer S.A, Ghana	Deltamethrin (100g/l)	FRE/13137/00671G	Insecticide for the control of insect pests in fruits and vegetables

48.	Delete 2.5SC	II	Newlife Medical Centre	Newlife Medical Centre	Deltamethrin (25%)	FRE/1352/00629G	Insecticides for public health purposes
49.	Devaxam 25WG	II	Reiss & Co. Ghana Limited	Reiss & Co. Ghana Limited	Thiamethoxam (15%)	FRE/1310/00649G	Insecticide for the control of insect pests of vegetables and pulses
50.	Diazol 50EW	II	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Diazinon (500g/l)	FRE/14100/00757G	Insecticide for the control of insect pests in vegetables
51.	Dimeking EC	II	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited, Accra	Dimethoate (400 g/l)	FRE/1599/00852G	Insecticide for the control of insect pests in fruits, cotton and vegetables
52.	Dimiprid 20SL	II	Reiss & Co. Ghana Ltd., Accra	Reiss & Co. Ghana Ltd., Accra	Imidacloprid (200g/l)	FRE/1310/00598G	Insecticide for the control of insect pests in vegetables
53.	Dimex 400EC	II	Louis Dreyfus CommoditiesGhana Ltd, Tema	Louis Dreyfus CommoditiesGhana Ltd, Tema	Dimethoate (400g/l)	FRE/1455/00735G	Insecticide for the control of aphids, plant bugs, fruit flies and leaf miners
54.	Direx 7.5G	II	Makhteshim Agan West Africa, Accra	Makhteshim Agan West Africa, Accra	Chlorpyrifos-ethyl (7.5%)	FRE/13100/00573G	Insecticide for the control of insect pests in vegetables
55.	Dursban 4E	II	Chemico Ltd Tema	Chemico Ltd Tema	Chlorpyrifos-ethyl (480g/l)	FRE/1505/00908G	Insecticide for the control of scale, borers, cockroaches and

							mosquitoes
56.	Dusfos 480EC	II	Bentronics Productions, Kumasi	Bentronics Productions, Kumasi	Chlorpyrifos-ethyl (480g/l)	FRE/1455/00781G	Insecticide for the control of insect pests in crops and for public health
57.	Efforia 45EC	II	Wienco Ghana Limited, Accra	Wienco Ghana Limited, Accra	Lambda- cyhalothrin (25%) + Thiamethoxam (3%)	FRE/1301/00534G	Insecticide for the control of insect pests in vegetables
58.	Ekuapa 2.5EC	II	Thomas Fosu Enterprise, Accra	Thomas Fosu Enterprise, Accra	Lambda- cyhalothrin (25g/l)	FRE/1390/00550G	Insecticide for the control of insect pests in vegetables and pulses
59.	Ema 1.92EC	II	Makhteshim Agan West Africa, Accra	Makhteshim Agan West Africa, Accra	Emamectin benzoate (1.92%)	FRE/13100/00575G	Insecticide for control of pests in vegetables and pulses
60.	Eradicoat T	III	Positiveware Trading Company Limited, Accra	Positiveware Trading Company Limited, Accra	Maltodextrin (282g/l)	FRE/13125/00615G	Insecticides for the control of insect pests and mites in fruits and vegetables
61.	Evict EC	II	L'espoir Company Limited, Accra	L'espoir Company Limited, Accra	Lambda- cyhalothrin (2.5%)	FRE/1453/00786G	Insecticide for the control of insect pest in vegetables

62.	Evisect S 50SP	II	Calli Ghana Co Ltd Accra	Calli Ghana Co Ltd Accra	Thiocyclam oxalate (500g/kg)	FRE/1506/00918G	Insecticide for the control of leaf miners in oil palm
63.	Evite 340WP	II	Jingbo Agro. Tech. Gh. Co. Ltd., Accra.	Jingbo Agro. Tech. Gh. Co. Ltd., Accra.	Tebufenozide (300g/kg) + Emamectin benzoate (40g/kg)	FRE/15139/00890G	Insecticide for the control of armyworms, cotton bollworm, corn borers caterpillars, plutella of cabbage and cereals
64.	Fam-O-thrine 2.5EC	II	Multi Heif Company Limited.	Multi Heif Company Limited.	Lambda- cyhalothrin (25g/l)	FRE/13128/00655G	Insecticide for the control of insect pests in vegetables
65.	Farin 200EC	II	Vista 2000 Limited, Accra	Vista 2000 Limited, Accra	Chlorpyrifos- ethyl (200g/l)	FRE/15142/00844G	Insecticide for the control of fruit borers, whiteflies, thrips, caterpillars and stem borers of pepper, oil palm, soybean and tomatoes
66.	Fastrack 10 SC	III	Agrimat Limited, Accra	Agrimat Limited, Accra	Alpha-cypermethrin (100 g/l)	FRE/1502/00954G	Insecticide for the control of insect pest in vegetables and fruit crops
67.	Fendona 5SC	III	Cama Agro Consult, Accra.	Cama Agro Consult, Accra.	Alpha-cypermethrin (50g/kg)	FRE/1498/00808G	Insecticide for public health purposes
68.	Ficam VC 80WP	II	Drugmat Limited, Accra	Drugmat Limited, Accra	Bendiocarb (80%)	FRE/13114/00555G	Insecticide for public health purposes

69.	Fipro 50EC	II	Dizengoff (Ghana) Limited, Accra	Dizengoff (Ghana) Limited, Accra	Fipronil (500g/l)	FRE/1308/00586G	Insecticide for the control of insect pests in vegetables and cereals
70.	Frankofen 20EC	II	Frankatson Limited, Accra	Frankatson Limited, Accra	Fenvalerate (200g/l)	FRE/1539/00943/G December 2015	Insecticide for the control of insect pests in vegetables
71.	Furadan 3G	II	Chemico Ltd., Tema	Chemico Ltd., Tema	Carbofuran (3%)	FRE/1505/00907R August 2015	Insecticide/ nematicide for the control of insect pests in rice, vegetables and oil palm
72.	Golan 20SP	III	Dizengoff (Ghana) Limited, Accra	Dizengoff (Ghana) Limited, Accra	Acetamiprid (200g/kg)	FRE/1308/00587G April 2013	Insecticide for the control of insect pests in vegetables and fruit crops
73.	Goliath Gel	III	Cama Agro Consulting Limited, Accra	Cama Agro Consulting Limited, Accra	Fipronil (0.05%)	FRE/1598/00879G August 2015	Insecticide for the control of flying and crawling domestic insects
74.	Hercules 50SC	II	Agrimat Limited, Madina, Accra	Agrimat Limited, Madina, Accra	Fipronil (50g/l)	FRE/14104/00721G October 2014	Insecticide for public health purposes
75.	Hercules Extra 20SC	II	Agrimat Limited, Madina, Accra	Agrimat Limited, Madina, Accra	Fipronil (200g/l)	FRE/14104/00722G October 2014	Insecticide for public health purposes

76.	Holy Black Mosquito Coil	III	Bon Arrive Supermarket, Accra	Bon Arrive Supermarket, Accra	Dimefluthrin (0.03%)	FRE/13116/00559G March 2013	Insecticide for the control of mosquitoes
77.	Impact 25EC	II	Vista 2000 Limited, Accra	Vista 2000 Limited, Accra	Lambda cyhalothrin (2.5%)	FRE/15142/00845G June 2015	Insecticide for the control of army worms in pepper and soybeans
78.	Inesfly Body Repellant	III	Inesfly Africa Ltd., Accra	Inesfly Africa Ltd., Accra	Pyrethrum extracts 1.2% + Piperonyl butoxide 0.3% + Ethanol 7.5%)	FRE/15143/00831G August 2015	Insecticide for repelling mosquitoes
79.	Inesfly EM House IGR NG	III	Inesfly Africa Ltd., Accra	Inesfly Africa Ltd., Accra	D-Allethrin (1.0%) + Alpha-cypermethrin (0.7%) + Pyriproxifen (0.01%)	FRE/15143/00832G June 2015	Insecticide for the control of insect pest in field crops and for public health purposes
80.	Inesfly EM House IGR NG Paint	III	Inesfly Africa Limited, Accra	Inesfly Africa Limited, Accra	D-Allethrin (1.0%) + Alpha-cypermethrin (0.7%) + Pyriproxifen (0.01%)	FRE/15143/00833G August 2015	Insecticide/ Miticide paint for the control of mosquitoes and other household pests
81.	Inesfly EM House 5A IGR	IV	Inesfly Africa Limited Tema.	Inesfly Africa Limited Tema.	Chlorpyrifos (3%) + Pyriproxifen (0.063%)	FRE/14104/00716G October 2014	Insecticide for the control of insect pests in mango, pawpaw, citrus and vegetables

82.	Inesfly 5A IGR NG Paint	III	Inesfly Africa Limited, Accra	Inesfly Africa Limited, Accra	Chlorpyrifos (1.5%) + Diazinon (1.5%) + Pyriproxyfen (0.063 %)	FRE/13104/00626G September 2013	Insecticide paint for the control of mosquitoes
83.	Inespalm	IV	Inesfly Africa Limited Tema.	Inesfly Africa Limited Tema.	Deltamethrin (0.5%) + excipients q.s.p. (100%)	FRE/14104/00718G October 2014	Insecticide for the control of leaf miners oil palm weevil, brown striped rhinoceros beetle in oil palm
84.	Insecta TDS	III	Louis Dreyfus Commodities, Ghana Ltd, Tema	Louis Dreyfus Commodities, Ghana Ltd, Tema	Imidacloprid (350g/kg) + Thiram (100g/kg)	FRE/1355/00562G March 2013	Insecticide/ Fungicide for seed treatment
85.	Kakalika Gel	III	Dizengoff Ghana Limited	Dizengoff Ghana Limited	Fipronil (0.05%)	FRE/1308/00618G September 2013	Insecticide for the control of cockroaches
86.	Kamotrine 2.5EC	II	Anichesvin Ventures, Kumasi	Anichesvin Ventures, Kumasi	Lambda- cyhalothrin (25g/l)	FRE/13123/00597G June 2013	Insecticide for the control of insect pests in vegetables and flowers
87.	Karto 2.5EC	II	Reiss & Co. Ghana Ltd., Accra	Reiss & Co. Ghana Ltd., Accra	Lambda- cyhalothrin (25g/l)	FRE/1310/00603G June 2013	Insecticide for the control of insect pests in vegetables and flowers

88.	KD 415EC	II	Chemico limited, Tema	Chemico limited, Tema	Chlorpyrifos (400g/l) + Lambda- cyhalothrin (15g/l)	FRE/1505/00909G August 2015	Insecticide for the control of scale and borers in cereals, vegetables and for public health purposes
89.	K-Optimal EC	II	Louis Dreyfus Commodities, Ghana Ltd, Tema	Louis Dreyfus Commodities, Ghana Ltd, Tema	Acetamiprid (20g/l) + Lambda-cyhalothrin (16g/l)	FRE/1455/00736G October 2014	Insecticide for the control of insect pests in vegetables
90.	K-Orthrine 250WG	II	Drugmat Limited, Accra	Drugmat Limited, Accra	Deltamethrin (250g/kg)	FRE/13114/00554G March 2013	Insecticide for public health purposes
91.	Kilsect 2.5EC	II	Bentronic Productions, Kumasi	Bentronic Productions, Kumasi	Lambda- cyhalothrin (25g/l)	FRE/1425/00775G November 2014	Insecticide for the control of insect pests in vegetables
92.	Konka Phosphide T	Ib	Jem Inter Continental Services, Tema	Jem Inter Continental Services, Tema	Aluminium Phosphide (56%)	FRE/1365/00612R August 2013	Insecticide for the control of insect pests in stored grains
93.	Lambad 2.5 EC	III	Badu Kaakyire Agrochemical Co. Ltd., Kumasi	Badu Kaakyire Agrochemical Co. Ltd., Kumasi	Lambda-cyhalothrin (25g/l)	FRE/1581/00885G August 2015	Insecticide for the control of insect pests in cereals and vegetables

94.	Lambda best 2.5 EC	II	Adu & Yeboah Enterprise, Kumasi	Adu & Yeboah Enterprise, Kumasi	Lambda- cyhalothrin (25g/l)	FRE/1333/00539G March 2013	Insecticide for the control of insect pests in vegetables and flowers
95.	Lambda Boss 2.5EC	II	K. Adu Enterprise, Kumasi	K. Adu Enterprise, Kumasi	Lambda-cyhalothrin (25g/l)	FRE/13131/00642G September 2013	Insecticide for the control of insect pests in vegetables and pulses
96.	Lambdaking 2.5EC	II	Rachans Enterprise, Accra	Rachans Enterprise, Accra	Lambda-cyhalothrin (2.5%)	FRE/1599/00842G December 2015	Insecticide for use on vegetables and horticulture
97.	Lambda Master 2.5EC	II	Cropstar Enterprise, Kumasi	Cropstar Enterprise, Kumasi	Lambda-cyhalothrin (25g/l)	FRE/1382/00624G September 2013	Insecticide for the control of insect pests in vegetables
98.	Lambda Max 2.5EC	II	Elvisco Farms Company Limited, Kumasi	Elvisco Farms Company Limited, Kumasi	Lambda-cyhalothrin (25g/l)	FRE/13111/00664G November 2013	Insecticide for the control of insect pests in vegetables and pulses

99.	Lambda Super 2.5EC	II	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Lambda-cyhalothrin (25g/l)	FRE/1543/00868G June 2015	Insecticide for the control of insect pests in vegetables and pulses
100.	Lambdacot EC	II	Afcott Ghana limited, Accra	Afcott Ghana limited, Accra	Lambda- cyhalothrin (25g/l)	FRE/1458/00788G November 2014	Insecticide for the control of insect pests in vegetables and pulses
101.	Lanju Black Mosquito Coil	III	AD&R Enterprise, Accra	AD&R Enterprise, Accra	Dimefluthrin (0.03%)	FRE/1341/00556G March 2013	Insecticide for the control of mosquitoes
102.	Levo 2.4SL	III	Dizengoff Ghana Ltd, Accra	Dizengoff Ghana Ltd, Accra	Oxymatrin (2.4%)	FRE/1308/00583G April 2013	Insecticide for the control of insect pest in vegetables and fruit crops
103.	Lufu 150SC	II	Ocean Trade Ltd, Accra	Ocean Trade Ltd, Accra	Thiamethoxam (100g/l) + Deltamethrin (50g/l)	FRE/15170/00834G June 2015	Insecticide for the control of capsids in cocoa
104.	M-Guard EC	II	Chemico Limited, Tema	Chemico Limited, Tema	Pirimiphos-methyl (80g/l) + Permethrin (15g/l)	FRE/1305/00596G June 2013	Insecticide for the control of insect pests in stored produce

105.	Master 2.5EC	II	Annoh & Sons Enterprise, Accra	Annoh & Sons Enterprise, Accra	Lambda-cyhalothrin (25g/l)	FRE/1422/00801G November 2014	Insecticide for the control of insect pests in vegetables
106.	Mektin 1.8EC	II	Dizengoff Ghana Ltd, Accra	Dizengoff Ghana Ltd, Accra	Abamectin (18g/l)	FRE/1308/00588G April 2013	Insecticide for the control of insect pests and mites in ornamentals and vegetables
107.	Methoate 40EC	II	Bentronics Productions, Kumasi	Bentronics Productions, Kumasi	Dimethoate (400g/l)	FRE/1425/00778G November 2014	Insecticide for the control of sucking, biting insects and spider mites
108.	Movento 100SC	III	Bayer S.A, Ghana, Accra	Bayer S.A, Ghana, Accra	Spirotetramat (100g/l)	FRE/13137/00670G December 2013	Insecticide for the control of insect pests in fruits and vegetables
109.	Pali 250WG	II	West Africa Environmental Science Limited, Accra	West Africa Environmental Science Limited, Accra	Deltamethrin (25%)	FRE/13125/00610G August 2013	Insecticides for public health purposes
110.	Pawa 2.5EC	II	Chemico Ltd, Tema	Chemico Ltd, Tema	Lambda-cyhalothrin (25g/l)	FRE/1505/00910G August 2015	Insecticide for the control of insect pests in vegetables

111.	Phostoxin T	Ib	Wienco Ghana Limited, Accra	Wienco Ghana Limited, Accra	Aluminium Phosphide (56%)	FRE/1301/00538R March 2013	Insecticide for the control of insect pests in stored grains
112.	Plan D 2.5 EC	II	Agrimat Limited, Accra	Agrimat Limited, Accra	Lambda-cyhalothrin (25g/l)	FRE/1302/00627G September 2013	Insecticide for the control of insect pests in vegetables and pulses
113.	Proguard 80WP	II	Agrimat Limited, Accra	Agrimat Limited, Accra	Propoxur (800g/kg)	FRE/1302/00594G April 2013	Insecticide for the control of mosquitoes and household pest
114.	Protecta CCA-Oxide Type C SL	II	Byes & Ways Company Limited, Accra	Byes & Ways Company Limited, Accra	Chromium trioxide (27.9%) Arsenic acid (24.6%) + Cupric oxide (11.3%)	FRE/13132/00632R September 2013	Insecticide for wood treatment
115.	Protect 1.9EC	II	Dizengoff (Ghana) Limited, Accra	Dizengoff (Ghana) Limited, Accra	Emamectin benzoate (1.9%)	FRE/1308/00585G April 2013	Insecticide for the control of insect pests in vegetables and pulses
116.	Protex 57TB	II	The Candel Company Limited, Accra	The Candel Company Limited, Accra	Aluminium Phosphide (56%)	FRE/1326/00544R March 2013	Insecticide for the control of insect pests in stored grains

117.	Punto SL	II	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited, Accra	Imidacloprid (200g/l)	FRE/1565/00853G August 2015	Insecticide for the control of aphids and whiteflies in egg-plant, tomatoes and sweetpotatoes
118.	Pyrical 480EC	II	Calli Ghana Co. Ltd., Tema	Calli Ghana Co. Ltd., Tema	Chlorpyrifos-ethyl (480g/l)	FRE/1406/00744G November 2014	Insecticide for the control of insect pests in pineapples
119.	Pyrifos 480EC	II	Louis dreyfus Commodities, Tema	Louis dreyfus Commodities, Tema	Chlorpyrifos-ethyl (480g/l)	FRE/1355/00660G November 2013	Insecticide for the control of insect pests in pineapples
120.	Pyrinex 48EC	II	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Chlorpyrifos-ethyl (480g/l)	FRE/14100/00763G November 2014	Insecticide for the control of insect pests in vegetables and for public health purposes
121.	Pyrinex Quick 256EC	II	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Chlorpyrifos (250g/l) + Deltamethrin (6g/l)	FRE/13100/00572G March 2013	Insecticide for the control of insect pests in vegetables and for public health purposes
122.	Rainchlorpyr 480EC	II	Rainbow Agrosiences Co Ltd, Accra	Rainbow Agrosiences Co Ltd, Accra	Chlorpyrifos-ethyl (480g/l)	FRE/1399/00540G March 2013	Insecticide for the control of insect pests in vegetables and field crops

123.	Rainlambda 2.5EC	II	Rainbow AgroSciences Co Ltd, Accra	Rainbow AgroSciences Co Ltd, Accra	Lambda-cyhalothrin (25g/l)	FRE/1399/00543G March 2013	Insecticide for the control of insect pests in vegetables
124.	Rainlambda Plus	II	Rainbow AgroSciences Co Ltd, Accra	Rainbow AgroSciences Co Ltd, Accra	Dimethoate (300g/l) + Lambda- cyhalothrin (15g/l)	FRE/1565/00854G August 2015	Insecticide for the control of insect pests in vegetables
125.	Raintham 350 SC	III	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited, Accra	Thiamethoxam (350g/l)	FRE/1399/00605G July 2013	Insecticide for the control of insect pests in vegetables and fruit crops
126.	Raintoxin 57TB	Ib	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited, Accra	Aluminium Phosphide (57%)	FRE/1565/00825R June 2015	Insecticide for the control of insect pests in stored produce
127.	Responsar EW	II	The Huge Ltd., Accra Newtown	The Huge Ltd., Accra Newtown	Cyfluthrin (50g/l)	FRE/1461/00821G December 2014	Insecticide for the control of flying and crawling insects
128.	Rimon 10EC	III	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Novaluron (100g/l)	FRE/14100/00764G November 2014	Insecticide for the control of insect pests in cabbage, tomatoes and pepper
129.	Rocky Super 2.5EC	II	PakGhana Co. Ltd., Kumasi	PakGhana Co. Ltd., Kumasi	Lambda-cyhalothrin (2.5%)	FRE/15165/00888G August 2015	Insecticide for the control of insect pests in pulses and vegetables

130.	Rubi 5WP	II	West Africa Environmental Science Ltd, Accra	West Africa Environmental Science Ltd, Accra	Alpha-cypermethrin (5%)	FRE/13125/00611G August 2013	Insecticide for public health purposes
131.	Sanitox 20EC	II	Annoh and Sons, Accra	Annoh and Sons, Accra	Fenvalerate (200g/l)	FRE/1422/00799G November 2014	Insecticide for the control of insect pests in vegetables and cowpea
132.	Sicoban 48EC	II	Sidalco Ltd, Accra	Sidalco Ltd, Accra	Chlorpyrifos-ethyl (480g/l)	FRE/1366/00669G December 2013	Insecticide for the control of insect pests in vegetables and crops
133.	Sidalprid 30.5EC	II	Sidalco Limited, Accra	Sidalco Limited, Accra	Imidacloprid (305g/l)	FRE/1366/00667G December 2013	Insecticide for the control of insect pests in vegetables
134.	Siege Pro	II	Cama Agro, Consult, Accra	Cama Agro, Consult, Accra	Hydramethylon (0.73%)	FRE/1498/00737G October 2014	Insecticide for the control of cockroaches and termites
135.	Simida 2.5EC	II	Natosh Enterprise, Kumasi	Natosh Enterprise, Kumasi	Lambda-cyhalothrin (25%)	FRE/1530/00826/G December 2015	Insecticide for the control of insect pests in vegetables, cereals, fruits and sugarcane
136.	Sinoban EC	II	Annoh and Sons, Accra	Annoh and Sons, Accra	Chlorpyrifos-ethyl (480g/l)	FRE/1422/00800G November 2014	Insecticide for the control of insect pests in vegetables

137.	Siricon10EC	II	Sidalco Ltd, Accra	Sidalco Ltd, Accra	Cypermethrin (10%)	FRE/1366/00668G December 2013	Insecticide for the control of insect pests in vegetables and fruits
138.	Solignum Exterior	III	Premier Steel Limited, Accra	Premier Steel Limited, Accra	Permethrin (0.2%)	FRE/13127/00630G September 2013	Insecticide for wood treatment
139.	Stop Mating Block	II	Splendid Agro Products, New Pokuase	Splendid Agro Products, New Pokuase	Methyl Eugenol (5ml/block) + Malathion (1ml/block)	FRE/1592/00882G August 2015	Insecticide for the control of <i>Batrocera spp.</i> in fruits
140.	Striker EC	II	Louis Dreyfus Commodities Ghana Ltd, Tema	Louis Dreyfus Commodities Ghana Ltd, Tema	Lambda-cyhalothrin (2.5%)	FRE/1355/00570G March 2013	Insecticide for the control of insect pest in vegetables
141.	Success Appat	U	Chemico Ltd, Tema	Chemico Ltd, Tema	Spinosad (0.24g/l)	FRE/1405/00684G March 2014	Insecticide for the control of fruit flies in fruits and vegetables
142.	Sumico 20EC	II	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Fenvalerate (200g/l)	FRE/1543/00865G August 2015	Insecticide for the control of insect pests in vegetables
143.	Sumitex 40EC	II	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Dimethoate (400g/l)	FRE/1543/00871G June 2015	Insecticide for the control of mealy bugs, mites, thrips, and borer larvae in vegetables and pineapples

144.	Super Tiger 2.5EC	III	Jakess Agro Chemicals, Kumasi	Jakess Agro Chemicals, Kumasi	Lambda-cyhalothrin (25g/l)	FRE/1467/00792G November 2014	Insecticide for the control of insect pests in vegetables
145.	Suncombi 30EC	II	Wynca Sunshine Agric Products & Trading Co., Limited	Wynca Sunshine Agric Products & Trading Co., Limited	Fenitrothion (25%) + Fenvalerate (5%)	FRE/1357/00634G September 2013	Insecticide for the control of insect pests in crops and for public health purposes
146.	Sunhalothrin 2.5EC	II	Wynca Sunshine Agric Products & Trading Co., Ltd, Accra	Wynca Sunshine Agric Products & Trading Co., Ltd, Accra	Lambda-cyhalothrin (25%)	FRE/1357/00656G October 2013	Insecticide for the control of insect pests in vegetables and pulses
147.	Sunpyrifos 48 EC	II	Wynca Sunshine Agric Products & Trading Co., Ltd., Accra	Wynca Sunshine Agric Products & Trading Co., Ltd., Accra	Chlorpyrifos ethyl (480g/l)	FRE/1357/00633G September 2013	Insecticide for the control of insect pests in crops and for public health purposes
148.	Tanalith C3310	II	Dupaul Wood Treatment Ghana Limited	Dupaul Wood Treatment Ghana Limited	Chromium trioxide (30.29%) + Arsenic pentoxide (17.3) + Cupric oxide (11.29)	FRE/1332/00631R September 2013	Insecticide for wood treatment
149.	Temaphos Tablet	Ib	Chemico Limited, Tema	Chemico Limited, Tema	Aluminium Phosphide (57%)	FRE/1405/00685R March 2014	Insecticide for the control of insect pests in stored grains
150.	Termiking 480EC	II	Rachans Enterprise, Accra	Rachans Enterprise, Accra	Chlorpyrifos-ethyl (480g/l)	FRE/1599/00843/G December 2015	Insecticide for the control of insect pests of vegetables and field

							crops
151.	Terminus 480EC	II	Kurama Company Limited, Accra	Kurama Company Limited, Accra	Chlorpyrifos-ethyl (480g/l)	FRE/1416/00770G November 2014	Insecticide for the control of insect pests in crops and for public health
152.	Thodan Super 35SC	IV	Reiss & Co (Ghana), Accra	Reiss & Co (Ghana), Accra	Acetamiprid (2%) + Lambda-cyhalothrin (1.5%)	FRE/1410/00713G October 2014	Insecticide for the control of mirids in cocoa
153.	Thomaxin P	II	Thomas Fosu Enterprise, Accra	Thomas Fosu Enterprise, Accra	Aluminium Phosphide (57%)	FRE/1390/00548R March 2013	Insecticide for the control of insect pests in stored grains
154.	Thunder OD-145	III	Wienco Ghana Limited, Accra	Wienco Ghana Limited, Accra	Imidacloprid (100g/l) + Beta-cyfluthrine (45g/l)	FRE/1301/00536G March 2013	Insecticide for the control of insect pests in cotton
155.	Tihan 175-OTEQ	III	Wienco Ghana Limited, Accra	Wienco Ghana Limited, Accra	Flubendiamide (100g/l) + Spirotetramat (75g/l)	FRE/1301/00537G March 2013	Insecticide for the control of insect pests on cotton
156.	Topstoxin	Ib	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Aluminium Phosphide (57%)	FRE/1543/00870R June 2015	Insecticide for the control of insect pests in stored grains

157.	Total Aerosol Spray	IV	Total Ghana Limited, Accra	Total Ghana Limited, Accra	Tetramethrin (0.3%) + Parallethrin (0.1%) + Cyphenothrin (0.14%) + Deltamethrin (0.17%)	FRE/1498/00739G October 2014	Insecticide for the control of flying and crawling insects
158.	Tricel 48EC	II	Reiss & Co Ghana, Accra	Reiss & Co Ghana, Accra	Chlorpyrifos-ethyl (480g/l)	FRE/1410/00767G November 2014	Insecticide for the control of insect pests in crops and for public health
159.	Trigger 10CS	II	Dizengoff (Ghana) Limited, Accra	Dizengoff (Ghana) Limited, Accra	Lambda- cyhalothrin (100g/kg)	FRE/1308/00584G April 2013	Insecticide for the control of insect pests in vegetables
160.	Trusban 48EC	II	Multi Heif Company Limited	Multi Heif Company Limited	Chlorpyrifos ethyl (480g/l)	FRE/13128/00638G September 2013	Insecticide for the control of insect pests in crops and for public health purposes
161.	Vectobac G	IV	Agrimat Limited, Accra	Agrimat Limited, Accra	<i>Bacillus thuringiensis</i> , serotype H-14, 3000 Units/mg	FRE/1402/00741G October 2014	Insecticide for the control of mosquito larvae
162.	VectoBac 12AS	IV	Agrimat Limited, Accra	Agrimat Limited, Accra	<i>Bacillus thuringiensis</i> , serotype H-14, 3000 Units/mg	FRE/1402/00742G October 2014	Insecticide for the control of mosquito larvae

163.	VectoBac WDG	IV	Challux Limited, Accra	Challux Limited, Accra	<i>Bacillus thuringiensis</i> subsp. <i>Israelensis</i> 3000 ITU/mg	FRE/1480/00810G December 2014	Insecticide for the control of mosquito larvae
164.	Vectolex WG	IV	Agrimat Limited, Accra	Agrimat Limited, Accra	<i>Bacillus sphaericus</i> (3000 ITU/mg)	FRE/1402/00740G October 2014	Insecticide for the control of larvae of mosquitoes
165.	Vertigo 100EC	III	Vista 2000 Limited, Accra	Vista 2000 Limited, Accra	Cypermethrin (100g/l)	FRE/15142/00846G June 2015	Insecticide for the control of army worms, thrips, whiteflies and fruit sucking bugs in onion and soybean
166.	Vigilant 25EC	III	Reiss & Co (Ghana), Accra	Reiss & Co (Ghana), Accra	Bifenthrin (25g/l)	FRE/1410/00766G November 2014	Insecticide for the control of bollworms, jassids, aphids, whiteflies, mites, hoppers in cotton and mango
167.	Vinyamat Ultra Paint	II	M&K (Ghana) Limited, Accra	M&K (Ghana) Limited, Accra	Bifenthrin (0.8%) + cypermethrin (1.6%)	FRE/13115/00558G March 2013	Insecticide paint for the control of flies and spiders
168.	Viper 46EC	II	Calli Ghana Ltd., Tema	Calli Ghana Ltd., Tema	Acetamiprid (16g/l) + Indoxacarb (30g/l)	FRE/1506/00932/G December 2015	Insecticide for the control of lepidoptera, sucking and biting insects
169.	Wonder 2.5EC	II	Errands4u, C4 - 68, DTD, Madina, Accra	Errands4u, C4 - 68, DTD, Madina, Accra	Lambda-cyhalothrin (2.5%)	FRE/14147/00706G	Insecticide for the control of insect pests of vegetables and

						April 2014	horticulture crops
170.	Wonderex 24SC	II	Reiss & Co. Ghana Limited, Accra	Reiss & Co. Ghana Limited, Accra	Thiamethoxam (24%)	FRE/1310/00650G October 2013	Insecticide for the control of insect pests in vegetables and pulses
171.	Zap 2.5EC	II	The Candel Company Limited, Accra	The Candel Company Limited, Accra	Lambda-cyhalothrin (2.5%)	FRE/1326/00553G March 2013	Insecticide for the control of insect pests in vegetables

Appendix 2.2 Herbicides

1.	Acticide EPW	III	BBC Industrials Co. Ltd., Accra	BBC Industrials Co. Ltd., Accra	Diuron (20%) + Carbendazim (9%) + 2- octyl-2H-isothiazol-3- one (2.8%)	FRE/1520/00950G December 2015	Fungal and algal paint preservative
2.	Agrithane 80 WP	III	Agrimat Limited, Accra	Agrimat Limited, Accra	Mancozeb (800g/kg)	FRE/1302/00628G September 2013	Fungicides for the control of leaf spots, mildew, leaf blight and scab in vegetables
3.	Amistar Top 325SC	III	Wienco Ghana Limited, Accra	Wienco Ghana Limited, Accra	Azoxystrobin (200g/l) + Difenconazole (125g/l)	FRE/1301/00535G March 2013	Systemic fungicide for the control of early blight, late blight, powdery mildew, leaf spot, anthracnose and rust in vegetables
4.	Athelete 80WP	III	Louis Dreyfus Commodities Ghana Ltd, Tema	Louis Dreyfus Commodities Ghana Ltd, Tema	Fosetyl-aluminium (800g/kg)	FRE/1355/00567G March 2013	Fungicide for the control of mildew and <i>Phytophthora</i> diseases in vegetables, fruits and pineapples
5.	Atracol 70WP	III	Bayer S.A, Ghana, Accra	Bayer S.A, Ghana, Accra	Propineb (700g/kg)	FRE/13137/00672G December 2013	Fungicide for the control of diseases in vegetables
6.	Benco 80 WP	III	Bentronic Productions, Kumasi	Bentronic Productions, Kumasi	Mancozeb (800g/kg)	FRE/1425/00783G November 2014	Fungicide for control of leaf spots, mildew, leaf blight and scab in vegetables, fruits and ornamentals
7.	Bosun 300SC	III	Jingbo Agrochemicals Tech. Gh. Co. Ltd., Accra.	Jingbo Agrochemicals Tech. Gh. Co. Ltd., Accra.	Boscalid (20%) + Kresoxim-methyl (10%)	FRE/15139/00891G August 2015	Fungicide for the control of powdery mildew, anthracnose, mould, rust

							and leaf spots in vegetables and fruits
8.	Calthio Mix 485WS	II	Calli Ghana Company Ltd., Tema	Calli Ghana Company Ltd., Tema	Imidacloprid (350g/kg) + Thiram (100g/kg) + Metalaxyl-M (35g/kg)	FRE/1506/00931G December 2015	Fungicide for the control of diseases in maize
9.	Calliete 80WP	III	Calli Ghana Company Limited, Tema	Calli Ghana Company Limited, Tema	Fosetyl aluminium (800g/kg)	FRE/1406/00747G November 2014	Systemic fungicide for the control of <i>phytophthora</i> in pineapple
10.	Caldo Bordeles Valles 20WP	III	Miqdadi Company Limited, Accra	Miqdadi Company Limited, Accra	Bordeaux mixture (Copper (II) Sulphate + Ca (OH) ₂) (200g/kg)	FRE/15137/00938/G December 2015	Fungicide for the control of diseases in vegetables and fruits
11.	Callis 400OL	III	Calli Ghana Company Limited, Tema	Calli Ghana Company Limited, Tema	Thiophanate methyl (400g/l)	FRE/1406/00746G November 2014	Fungicide for the control of <i>yellow</i> and <i>black sigatoka</i> in bananas
12.	Carbendazim 50WP	III	Agrimat Limited, Accra	Agrimat Limited, Accra	Carbendazim (500g/kg)	FRE/1302/00552G March 2013	Fungicide for the control of leaf spots, mildew, leaf blight and scab in vegetables
13.	Champion WP	III	Chemico Limited, Tema	Chemico Limited, Tema	Copper Hydroxide (77%)	FRE/1405/00688G March 2014	Fungicide for the control of <i>P. palmivora</i> and <i>P. megakarya</i> in cocoa and coffee
14.	Chemoliette 80WP	III	Chemico Limited, Tema	Chemico Limited, Tema	Fosetyl aluminium (800g/kg)	FRE/1405/00690G March 2014	Systemic fungicide for the control of <i>phytophthora</i> diseases in pineapple

15.	Cuprofix 30 Disperse	II	Chemico Limited, Tema	Chemico Limited, Tema	Mancozeb (30%) + Metallic Copper (12%)	FRE/1405/00689G March 2014	Fungicide for the control of powdery mildew, anthracnose, leaf and fruit spots in citrus, mango and vegetables
16.	Curenox 50WP	III	Miqdadi Company Limited, Accra	Miqdadi Company Limited, Accra	Copper Oxychloride (50%)	FRE/15137/00939/G December 2015	Fungicide for the control of diseases in fruits and vegetables
17.	Damazeb 80WP	III	Vista 2000 Limited, Accra	Vista 2000 Limited, Accra	Mancozeb (800g/kg)	FRE/15142/00849R June 2015	Fungicide for the control of diseases in soybean, groundnut, pepper, banana, melon, tomatoes and tuber crops
18.	Dithane M45 WP	III	Chemico Limited, Tema	Chemico Limited, Tema	Mancozeb (800g/kg)	FRE/1505/00902G August 2015	Fungicide for the control of leaf spots, mildew, leaf blight and scab of fruits and vegetables
19.	Dizcozeb 80WP	III	Dizengoff Ghana Limited, Accra	Dizengoff Ghana Limited, Accra	Mancozeb (800g/kg)	FRE/1308/00620G September 2013	Fungicides for the control of leaf spots, mildew, leaf blight and scab in vegetables
20.	Fantic Plus 69WP	III	Calli Ghana Co. Ltd., Tema	Calli Ghana Co. Ltd., Tema	Cuprous oxide (60%) + Benalaxyl-M (9%)	FRE/1306/00557G March 2013	Fungicide for the control of <i>Phytophthora megakarya</i> in cocoa
21.	Foko Super 80WP	III	Thomas Fosu Enterprise, Accra	Thomas Fosu Enterprise, Accra	Mancozeb (800g/kg)	FRE/1390/00546G March 2013	Fungicide for the control of diseases in vegetables
22.	Folpan 50WP	III	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Folpet (500g/l)	FRE/14100/00760G	Fungicide for the control of diseases in vegetables

						November 2014	
23.	Fungikill 50WP	III	Chemico Ltd, Tema	Chemico Ltd, Tema	Copper (35%) + Metalaxyl (15%)	FRE/1505/00926G October 2015	Fungicide for the control of <i>P. palmivora</i> and <i>P. megakarya</i> in cocoa
24.	Goldazim 500SC	III	Kurama Company Limited	Kurama Company Limited	Carbendazim (500g/l)	FRE/1416/00773G November 2014	Systemic fungicide for the control of diseases in fruits and vegetables
25.	Ivory 80WP	III	Calli Ghana Company Ltd., Tema	Calli Ghana Company Ltd., Tema	Mancozeb (800g/kg)	FRE/1306/00530G March 2013	Fungicide for the control of diseases in vegetables and fruits
26.	Kenmaneb 80WP	III	K. Adu Enterprise, Kumasi	K. Adu Enterprise, Kumasi	Maneb (80%)	FRE/13131/00644G September 2013	Fungicide for the control of leaf spots, downy mildew and fruit rot in vegetables
27.	Kentan 40WG	III	Calli Ghana Company Limited, Tema	Calli Ghana Company Limited, Tema	Copper Hydroxide (400g/kg)	FRE/1306/00641G September 2013	Fungicide for the control of <i>Phytophthora megakarya</i>
28.	Kilazeb 80WP	III	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Mancozeb (800g/kg)	FRE/1543/00877G June 2015	Fungicide for the control of leaf spots, mildew, leaf blight and scab in vegetables and fruits
29.	Kocide 2000 WP	III	Calli Ghana Limited, Accra	Calli Ghana Limited, Accra	Cupric hydroxide (53.8%)	FRE/1406/00798G December 2014	Fungicide for the control diseases in cocoa
30.	Kofazeb 80WP	III	Kofamob Agro Services	Kofamob Agro	Mancozeb (800g/kg)	FRE/1364/00613G August 2013	Fungicide for the control of leaf spots, mildew,

			Ltd, Kumasi	Services Ltd, Kumasi			leaf blight and scab in vegetables
31.	Mancozan Super WP	III	Louis Dreyfus Commodities, Ghana Ltd, Tema	Louis Dreyfus Commodities, Ghana Ltd, Tema	Mancozeb (640g/kg) + Metalaxyl (80g/kg)	FRE/1355/00569G March 2013	Fungicide for the control of diseases in vegetables
32.	Manlax	III	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited, Accra	Mancozeb (64%) + Metalaxy (8%)	FRE/1565/00857G June 2015	Fungicide for the control of downy mildew, late and early blight in lettuce, onions and sweetpotatoes
33.	Mawelaxyl 72WP	III	Blue Anchor Farms and Enterprise, Accra	Blue Anchor Farms and Enterprise, Accra	Copper Oxide (60%)+ Metalaxyl (12%)	FRE/14146/00705G April 2014	Fungicide for the control of diseases in vegetables
34.	Merpan 50WP	III	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Captan (500g/kg)	FRE/14100/00761G November 2014	Fungicide for the control of diseases in fruits, and vegetables
35.	Metalm 72WP	III	Kurama Company Limited, Accra	Kurama Company Limited, Accra	Cuprous oxide (60%) + Metalaxyl (12%)	FRE/1416/00774G November 2014	Fungicide for the control of black pod disease in cocoa
36.	Navito 300SC	III	Bayer S.A, Ghana, Accra	Bayer S.A, Ghana, Accra	Terbuconazole (200g/l) + Trifloxystrobin (100g/l)	FRE/13137/00673G December 2013	Fungicide for the control of diseases in vegetables
37.	Nordox Super 75 WG	III	Wienco Ghana Limited, Accra	Wienco Ghana Limited, Accra	Cuprous oxide (86%)	FRE/1401/00699G March 2014	Fungicide for the control of <i>Phytophthora palmivora</i> and <i>Phytophthora megakarya</i> on cocoa
38.	Rainmancoz 80WP	III	Rainbow Agrosiences Co	Rainbow Agrosiences	Mancozeb (800g/kg)	FRE/1399/00542G	Fungicide for the control

			Ltd, Accra	Co Ltd, Accra		March 2013	of leaf spots, mildew and leaf blight in vegetables
39.	Raintebzol 430SC	III	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited, Accra	Tebuconazole (430g/l)	FRE/1399/00606G July 2013	Fungicide for the control of rust, leaf spots, mildew, leaf blight in fruits and vegetables
40.	Raintop-M 70WP	III	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited, Accra	Thiophanate methyl (700g/kg)	FRE/1399/00607G July 2013	Fungicide for the control of leaf spots, mildew, leaf blight and scab in vegetables
41.	Seedrex WP	III	The Candel Company Limited, Accra	The Candel Company Limited, Accra	Permethrin (33%) + Carbendazim (15%) + Chlorothalonil (12%)	FRE/1355/00589G April 2013	Fungicide for seed treatment
42.	Shavit F 715WP	III	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Folpet (700g/kg) + Triadimenol (1.5g/kg)	FRE/14100/00759G November 2014	Fungicide for the control of diseases in vegetables
43.	Sphinx star 480WDG	III	Adama West Africa Ltd, Accra	Adama West Africa Ltd, Accra	Dimethomorph (80g/l) + Chlorothalonil (400g/l)	FRE/14100/00818G December 2014	Fungicide for the control of diseases in vegetables
44.	Skyrobin 50WG	III	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited, Accra	Azoxystrobin (500g/kg)	FRE/1399/00646G September 2013	Fungicide for the control of mildew, leaf blight, scab and anthracnose in vegetables
45.	Skystar 280SC	III	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited, Accra	Azoxystrobin (20%) + Propiconazole (8%)	FRE/1399/00645G September 2013	Fungicide for the control of leaf spots, mildew, leaf blight, scab and anthracnose in vegetables

46.	Suncozeb 80WP	III	Wynca Sunshine Agric Products & Trading Co Ltd, Accra	Wynca Sunshine Agric Products & Trading Co Ltd, Accra	Mancozeb (800kg/kg)	FRE/1357/00637G September 2013	Fungicide for the control of leaf spots, mildew, leaf blight and scab in vegetables
47.	Thiopsin 70WP	III	Badu Kaakyire Agrochemical Co. Ltd.,Kumasi	Badu Kaakyire Agrochemical Co. Ltd.,Kumasi	Thiophanate-methyl (70%)	FRE/1381/00551G March 2013	Fungicide for the control of diseases in crops
48.	Tilt	III	Calli Ghana Company Limited, Tema	Calli Ghana Company Limited, Tema	Propiconazole (250g/l)	FRE/1406/00745G November 2014	Fungicide for the control of fungal diseases in banana
49.	Top Cop	III	Chemico Limited, Tema	Chemico Limited, Tema	Sulphur (50%) + Copper (8%)	FRE/1505/00903G August 2015	Fungicide / miticide for the control of diseases in vegetables
50.	Trimangol 80WP	III	Chemico Limited, Tema	Chemico Limited, Tema	Maneb (800g/kg)	FRE/1505/00901G August 2015	Fungicide for the control of leaf spot, downy mildew, leaf blight and scab of cereals, vegetables
51.	Victory 72WP	III	Dizengoff Ghana Limited, Accra	Dizengoff Ghana Limited, Accra	Metalaxyl (8%) + Mancozeb (64%)	FRE/1308/00616G September 2013	Fungicide for the control of fungal diseases in vegetables and fruits
52.	Volley 88OL	III	Cama Agro Consulting Limited, Accra	Cama Agro Consulting Limited, Accra	Fenpropimorph (880g/l)	FRE/1598/00880G August 2015	Fungicide for the control of <i>Mycosphaerella musicola</i> and <i>Mycosphaerella fijiensis</i> in banana
53.	Zerofly Storage Bag	III	Kofamob Agro Services Ltd, Kumasi	Kofamob Agro Services Ltd, Kumasi	Mancozeb (800kg/g)	FRE/13125/00659G November 2013	Fungicide for the control of leaf spots, mildew, leaf blight and scab in

							vegetables
54.	Adom 48SL	III	Jakess Agro Company Ltd, Kumasi	Jakess Agro Company Ltd, Kumasi	Glyphosate (410g/l)	FRE/1467/00791G November 2014	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
55.	Adwuma Wura 480SL	III	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Glyphosate (480g/l)	FRE/1543/00863G August 2015	Herbicide for the control of annual, perennial grasses and broadleaf weeds in cereals and vegetables
56.	Adwuma Wura 75.7WSG	III	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Glyphosate (75.7%)	FRE/1543/00864G August 2015	Herbicide for the control of annual, perennial grasses and broadleaf weeds in cereals and vegetables
57.	Afuo Wura 48SL	III	WAAF Agro Limited, Techiman	WAAF Agro Limited, Techiman	Glyphosate (480g/l)	FRE/15108/00851G June 2015	Herbicide for the control of annual, perennial broadleaf weeds and grasses in cereals and vegetables
58.	Arsenal Gen 2SL	II	Cama Agro Consultancy Accra.	Cama Agro Consultancy Accra.	Imazapyr (250g/l)	FRE/1498/805G August 2014	Selective post emergence herbicide for the control of grasses in cereals
59.	Asomu 72SL	II	Multi Heif Company Limited	Multi Heif Company Limited	2, 4-D Amine salt (720g/l)	FRE/13128/00640G September 2013	Herbicide for the control of broadleaf weeds and sedges

60.	Best Up 480SL	III	Vista 2000 Limited, Accra	Vista 2000 Limited, Accra	Glyphosate (480g/l)	FRE/15142/00850G August 2015	Herbicide for the control of annual, perennial broadleaf weeds and grasses in maize, rubber, oil palm, coffee and rice
61.	Bextra 72SL	II	Bentronics Productions, Kumasi	Bentronics Productions, Kumasi	2,4 D Amine (720g/l)	FRE/1425/0022G October, 2014	Selective herbicide for the control of broadleaf weeds in maize, rice and sorghum
62.	Bisonrice 400SC	III	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited, Accra	Bispyribac-sodium (400g/l)	FRE/1565/00839G June 2015	Selective herbicide for the control of grasses and broadleaf weeds in rice
63.	Bonamine 720EC	II	Bon Agro Company Limited, Somanya	Bon Agro Company Limited, Somanya	2,4-D Amine (720 g/l)	FRE/15149/00935G December 2015	Herbicide for the control of broadleaf weeds in maize and rice
64.	Bonsate 480SL	III	Bon Agro Company Limited, Somanya	Bon Agro Company Limited, Somanya	Glyphosate (480g/l)	FRE/15149/00936G December 2015	Herbicide for the control of weeds
65.	Butaforce EC	III	Jubaili Agrotec Ltd., Accra	Jubaili Agrotec Ltd., Accra	Butachlor (500g/l)	FRE/15145/00828G June 2015	Herbicide for the control of annual grasses and broadleaf weeds in cereals
66.	Butaplast EC	III	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Butachlor (50%)	FRE/1543/00876G August 2015	Pre-emergent herbicide for the control of annual, perennial grasses and broadleaf weeds in rice, soybean, cotton and vegetables

67.	Calliherbe 720SL	II	Calli Ghana Co. Ltd, Tema	Calli Ghana Co. Ltd, Tema	2,4-D Amine (720g/l)	FRE/1306/00531G March 2013	Selective herbicide for the control of broadleaf weeds in cereals and tree crops
68.	Capizad EC	III	Louis Dreyfus Commodities, Tema	Louis Dreyfus Commodities, Tema	Haloxypop-R-methyl (104g/l)	FRE/1355/00661G November 2013	Herbicide for the control of annual, perennial grasses and broadleaf weeds in cereals and vegetables
69.	Canphosate SL	III	Errands4u, C4 - 68, DTD, Madina, Accra	Errands4u, C4 - 68, DTD, Madina, Accra	Glyphosate (360g/l)	FRE/14147/00709G April 2014	Herbicide for the control of grasses and broadleaf weeds
70.	Canquat Super SL	II	Errands4u, C4 - 68, DTD, Madina, Accra	Errands4u, C4 - 68, DTD, Madina, Accra	Paraquat dichloride (20%)	FRE/14147/00710R April 2014	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
71.	Chemopax 500 SC	II	Chemico Limited, Tema	Chemico Limited, Tema	Ametryn (485g/l) + Trazine (15g/l)	FRE/1305/00600G June 2013	Herbicide for the control of annual, perennial grasses and broadleaf weeds
72.	Chemosate 360SL	III	Chemico Limited, Tema	Chemico Limited, Tema	Glyphosate (360g/l)	FRE/1405/00687G March 2015	Herbicide for the control of annual and perennial weeds
73.	Chemovar 80WP	III	Chemico Limited, Tema	Chemico Limited, Tema	Bromacil (800g/kg)	FRE/1505/00895G August 2015	Herbicide for the control of grasses and broadleaf weeds in pineapples
74.	Chemuron 80WP	III	Chemico Limited, Tema	Chemico Limited, Tema	Diuron (80%)	FRE/1505/00896G August 2015	Herbicide for the control of grasses in pineapples,

							citrus and mangoes
75.	Chemostorm 500EC	III	Chemico Limited, Tema	Chemico Limited, Tema	Pendimethalin (500g/l)	FRE/1305/00599G June 2013	Pre-emergent herbicide for the control of weeds in cereals, cotton and soybean
76.	Chemoxone SL	II	Chemico Limited, Tema	Chemico Limited, Tema	Paraquat dichloride (200g/l)	FRE/1505/00897R August 2015	Herbicide for the control of broadleaf weeds and grasses
77.	Corta 480EC	III	Louis Dreyfus Commodities Ghana Ltd, Tema	Louis Dreyfus Commodities Ghana Ltd, Tema	Trichlopyr (480g/l)	FRE/1355/00561G March 2013	Selective herbicide for the control of broadleaf weeds in oil palm
78.	Dextra 72SL	II	Sefa & Jane Agro, Kumasi	Sefa & Jane Agro, Kumasi	2, 4-D Amine salt (720g/l)	FRE/13135/00657G October 2013	Herbicide for the control of broadleaf weeds and sedges
79.	Di-On WP	III	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Diuron (80%)	FRE/1543/00874G August 2015	Herbicide for the control of annual, perennial grasses and broadleaf weeds in pineapples, citrus and mangoes
80.	Diurex 80WDG	II	Makhteshim Agan West Africa, Accra	Makhteshim Agan West Africa, Accra	Diuron (800g/kg)	FRE/13100/00577G March 2013	Herbicide for the control of broadleaf weeds and grasses in cereals
81.	Eliminator Plus 150SL	II	Rainbow AgroSciences Co., Limited, Accra	Rainbow AgroSciences Co., Limited, Accra	Diquat dibromide (150g/l)	FRE/1565/00841R June 2015	Herbicide used to desiccate crops for harvesting
82.	Eliminator Plus 200SL	II	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited,	Diquat dibromide (200g/l)	FRE/1565/00840R	Herbicide used as pre- harvest aid to desiccate

				Accra		June 2015	crops for harvesting
83.	Ervextra 72SL	III	Louis Dreyfus Commodities, Ghana Ltd, Tema	Louis Dreyfus Commodities, Ghana Ltd, Tema	2, 4-D Amine (720g/l)	FRE/1355/00568G March 2013	Selective herbicide for the control of broadleaf weeds in rice, maize, sorghum, millet and sugarcane
84.	ForceUp	III	Jubaili Agrotec Ltd., Kumasi	Jubaili Agrotec Ltd., Kumasi	Glyphosate (41%)	FRE/15145/00829G August 2015	Herbicide for the control of weeds in crops
85.	Fos-lade Super 15EC	III	Thomas Fosu Enterprise, Accra	Thomas Fosu Enterprise, Accra	Fluazifop-p-butyl (150g/l)	FRE/1390/00546G March 2013	Selective herbicide for the control of grasses and broadleaf weeds
86.	Franko-2, 4-D	II	Frankatson Limited, Accra	Frankatson Limited, Accra	2,4-D Amine salts (720g/l)	FRE/1439/00797G November 2014	Herbicide for the control of broadleaf weeds and sedges
87.	Frankosate 41SL	III	Frankatson Limited, Accra	Frankatson Limited, Accra	Glyphosate (410g/l)	FRE/1439/00794G November 2014	Herbicide for the control of broadleaf weeds, sedges and grasses
88.	Frankosulfuron	III	Frankatson Limited, Accra.	Frankatson Limited, Accra.	Nicosulfuron (40g/l)	FRE/1539/00944G December 2015	Herbicide for the control of grasses in Maize
89.	Gallant Super	III	Chemico Limited, Tema	Chemico Limited, Tema	Haloxypop (108g/l)	FRE/1505/00898G August 2015	Post emergence herbicide for the control of broadleaf weeds in vegetables
90.	Garlon 4 EC	III	Chemico Limited, Tema	Chemico Limited, Tema	Triclopyr (480g/l)	FRE/1505/00899G August 2015	Herbicide for use as tree killer and the control of broadleaf weeds

91.	Glyfos 41SL	III	Agrimat Limited, Accra	Agrimat Limited, Accra	Glyphosate (410g/l)	FRE/1402/00809G December 2014	Herbicide for the control of annual, perennial grasses and broadleaf weeds
92.	Glycot 41SL	III	Afcott Ghana Limited, Accra	Afcott Ghana Limited, Accra	Glyphosate (410g/l)	FRE/1458/00789G November 2014	Herbicide for the control of annual, perennial grasses and broadleaf weeds in cereals
93.	Glygold 41SL	III	L'espoir Company Limited Accra	L'espoir Company Limited Accra	Glyphosate (410g/l)	FRE/1453/00768G November 2014	Herbicide for the control of annual and perennial broadleaf weeds and grasses
94.	Glyphader 480SC	III	Louis Dreyfus Commodities, Ghana Ltd, Tema	Louis Dreyfus Commodities, Ghana Ltd, Tema	Glyphosate (480g/l)	FRE/1455/00734G October 2014	Herbicide for the control of broadleaf weeds and grasses
95.	Glyphader 75SG	III	Louis Dreyfus Commodities Gh. Ltd, Tema	Louis Dreyfus Commodities Gh. Ltd, Tema	Glyphosate (757g/kg)	FRE/1455/00733G October 2014	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
96.	Glyphogan 480SL	III	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Glyphosate (360g/l)	FRE/14100/00813G December 2014	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
97.	Glyphosate Technical	III	Wynca Sunshine Agric Products & Trading, Accra	Wynca Sunshine Agric Products & Trading, Accra	Glyphosate Ammonium Salt (88 Min)	FRE/1557/00886G August 2015	Herbicide for the control of broadleaf weeds and grasses in maize
98.	Glyphosate	III	Wynca Sunshine Agric	Wynca Sunshine Agric Products & Trading,	Glyphosate Ammonium Salt (95	FRE/1557/00887G	Herbicide for the control of broadleaf weeds and

	Technical		Products & Trading, Accra	Accra	Min)	August 2015	grasses in maize
99.	Glystar 41SL	III	Cropstar Enterprise, Kumasi	Cropstar Enterprise, Kumasi	Glyphosate (41%)	FRE/1553/00894G August 2015	Herbicide for the control of broadleaf weeds and grasses
100.	Glywephoasate	III	Blue Anchor Farms and Enterprise, Accra	Blue Anchor Farms and Enterprise, Accra	Glyphosate (360g/l)	FRE/14146/00703G April 2014	Herbicide for the control of grasses and broadleaf weeds
101.	Grammapack Super 20SL	II	Kofamob Agro Services Ltd, Kumasi	Kofamob Agro Services Ltd, Kumasi	Paraquat dichloride (20%)	FRE/1364/00614R August 2013	Non-selective herbicide for the control of broadleaf weeds and grasses
102.	Gramofarm Super 20SL	II	Elvisco Farms Company Limited, Kumasi	Elvisco Farms Company Limited, Kumasi	Paraquat dichloride (200g/l)	FRE/13111/00591R April 2013	Non-selective herbicide for the control of broadleaf weeds and grasses
103.	Grammosharp Super 20SL	II	Cropstar Enterprise, Kumasi	Cropstar Enterprise, Kumasi	Paraquat dichloride (20%)	FRE/1382/00625R September 2013	Non-selective broad spectrum herbicide for the control of broadleaf weeds and grasses
104.	ForceUron	III	Jubaili Agrotec Ltd. Kumasi	Jubaili Agrotec Ltd. Kumasi	(Diuron 80WP)	FRE/15145/00942/G December 2015	Herbicide for the control of weeds in pineapples, cotton and sugarcane
105.	Guardforce OD	III	Jubaili Agrotec Ltd, Accra	Jubaili Agrotec Ltd, Accra	Nicosulfuron (4%)	FRE/15145/00941G December 2015	Herbicide for the control of annual grass weeds
106.	Herbextra 72SL	II	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	2, 4-D Amine (720g/l)	FRE/1543/00859G August 2015	Herbicide for the control of grasses in rice, sorghum and maize

107.	Herbimais WG	III	Louis Dreyfus Commodities Gh. Ltd, Tema	Louis Dreyfus Commodities Gh. Ltd, Tema	Atrazine (750g/kg) Nicosulfuron (40g/kg)	FRE/1455/00730G October 2014	Herbicide for the control of annual, perennial grasses and broadleaf weeds in maize
108.	Herbisuper S	III	Louis Dreyfus Commodities Ghana, Tema	Louis Dreyfus Commodities Ghana, Tema	Acetachlor (300g/l) + Simazine (200g/l)	FRE/1355/00563G March 2013	Herbicide for the control of annual and perennial grasses and broadleaf weeds
109.	Hyvar X 80WP	III	Calli Ghana Co Ltd, Tema	Calli Ghana Co Ltd, Tema	Bromacil (800g/kg)	FRE/1306/00532G March 2013	Herbicide for the control of weeds in pineapple
110.	Kabaherb SL	III	Badu Kaakyire Agrochemical Co. Ltd., Kumasi	Badu Kaakyire Agrochemical Co. Ltd., Kumasi	2,4-D Amine Salts (720g/l)	FRE/1581/00884G August 2015	Herbicide for the control of annual, perennial grasses and broadleaf weeds in rice
111.	Kabasate 41SL	III	Badu Kaakyire Agrochemical Co. Ltd., Kumasi	Badu Kaakyire Agrochemical Co. Ltd., Kumasi	Glyphosate (410g/l)	FRE/1581/00883G August 2015	Herbicide for the control of annual, perennial grasses and broadleaf weeds in cereals and vegetables
112.	Kalach Extra 70SG	III	Calli Ghana Company Limited, Tema	Calli Ghana Company Limited, Tema	Glyphosate (700g/kg)	FRE/1406/00712G October 2014	Herbicide for the control of grasses and broadleaf weeds
113.	Kalach 360SL	III	Calli Ghana Company Limited, Tema	Calli Ghana Company Limited, Tema	Glyphosate (360g/l)	FRE/1406/00711G October 2014	Herbicide for the control of broadleaf weeds and grasses
114.	Kwatriqua 20SL	II	Agrimat Limited, Accra	Agrimat Limited, Accra	Paraquat dichloride (200g/l)	FRE/1402/00804R December 2014	Herbicide for the control of broadleaf weeds and grasses

115.	Kurasate 360SL	III	Kurama Company Limited, Accra	Kurama Company Limited, Accra	Glyphosate (360g/l)	FRE/1416/00772G November 2014	Herbicide for the control of grasses and broadleaf weeds
116.	Labada 75G	III	Louis Dreyfus Commodities Gh., Ltd, Tema	Louis Dreyfus Commodities Gh., Ltd, Tema	Glyphosate (757g/kg)	FRE/1455/00731G October 2014	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
117.	Lagon 575SC	III	Wienco Ghana Limited, Accra	Wienco Ghana Limited, Accra	Isoxaflucole (50g/l) + Aclonifene (333g/l)	FRE/1301/00651G October 2013	Pre-emergent herbicide for the control of grasses and broadleaf weeds in maize
118.	Maxitol 865SL	III	Vista 2000 Limited, Accra	Vista 2000 Limited, Accra	2,4-D Amine Salts (865g/l)	FRE/15142/00847G June 2015	Herbicide for the control of broadleaf weeds in cereals and sugarcane
119.	Meshye Nwura 41SL	III	Sefa & Jane Agro. Kumasi	Sefa & Jane Agro. Kumasi	Glyphosate (410g/l)	FRE/13135/00654G October 2013	Herbicide for the control of grasses and broadleaf weeds
120.	Nico 40OD	III	Jingbo Agrochemicals Tech. Gh. Co. Ltd., Accra.	Jingbo Agrochemicals Tech. Gh. Co. Ltd., Accra.	Nicosulfuron (40g/l)	FRE/15139/00892G August 2015	Herbicide for the control of grasses and broadleaf weeds in cereals
121.	Nicobest 75WG	III	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited, Accra	Nicosulfuron (75%)	FRE/1565/00838G June 2015	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
122.	Nicocal 40OD	III	Bentronic Productions, Accra	Bentronic Productions, Accra	Nicosulfuron (400g/l)	FRE/1325/00609G August 2013	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables

123.	Nicogan 40OD	III	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Nicosulfuron (40g/l)	FRE/14100/00817G December 2014	Herbicide for the control of grasses and broadleaf weeds in cereals and legumes
124.	Nicoherb 40OD	III	J.K. Duku Enterprise, Kumasi	J.K. Duku Enterprise, Kumasi	Nicosulfuron (40g/l)	FRE/1498/00738G October 2014	Herbicide for the control of weeds in cereals and vegetables
125.	Nicoking 40SL	III	Rachans Enterprise, Accra	Rachans Enterprise, Accra	Nicosulfuron (400g/l)	FRE/13102/00590G April 2013	Herbicide for the control of weeds in cereals and vegetables
126.	Nicomais Plus	III	Kofamob Agro Services Ltd, Kumasi	Kofamob Agro Services Ltd, Kumasi	Nicosulfuron (400g/l)	FRE/1364/00653G October 2013	Herbicide for the control of weeds in cereals and vegetables
127.	Nico Plus OD	III	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Nicosulfuron (4%)	FRE/1543/00873G August 2015	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
128.	Nicoskonka 75WDG	III	Jem Inter- Continental Services, Tema	Jem Inter- Continental Services, Tema	Nicosulfuron (75g/kg)	FRE/1365/00529G March 2013	Herbicide for the control of weeds in cereals and vegetables
129.	Nicostar 40SL	III	Cropstar Enterprise, Kumasi	Cropstar Enterprise, Kumasi	Nicosulfuron (400g/l)	FRE/1382/00623G September 2013	Herbicide for the control of weeds in cereals and vegetables
130.	Nnobia 41SL	III	J. K. Duku Enterprise, Kumasi	J. K. Duku Enterprise, Kumasi	Glyphosate (41%)	FRE/1455/00739G October 2014	Herbicide for the control of grasses and broadleaf weeds
131.	Nwura Wura 360SL	III	Wynca Sunshine Agric	Wynca Sunshine Agric Products & Trading,	Glyphosate (360g/l)	FRE/1457/00749G	Herbicide for the control of grasses and broadleaf

			Products & Trading, Accra	Accra		November 2014	weeds
132.	Oyeadieyie 41SL	III	Frankatson Limited, Accra	Frankatson Limited, Accra	Glyphosate (410g/l)	FRE/1439/00795G November 2014	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
133.	Ogyefo 72SL	II	Thomas Fosu Enterprise, Accra	Thomas Fosu Enterprise, Accra	2,4-D Amine (720g/l)	FRE/1390/00547G March 2013	Selective herbicide for the control of broadleaf weeds in rice
134.	Orizo Plus SL	II	The Candel Company Limited, Accra	The Candel Company Limited, Accra	Propanil (360g/l) + 2,4-D Amine salts (200g/l)	FRE/1426/00819G December 2014	Selective herbicide for the control of grasses and broadleaf weeds in rice
135.	Paracot SL	II	Afcott Ghana Ltd, Kumasi	Afcott Ghana Ltd, Kumasi	Paraquat dichloride (200g/l)	FRE/1458/00787R November 2014	Non-selective herbicide for the control of grasses and broadleaf weeds
136.	Pencal 500EC	II	Calli Ghana Ltd., Tema	Calli Ghana Ltd., Tema	Pendimethalin (500g/l)	FRE/1506/00928G December 2015	Herbicide for the control of grasses and broadleaf weeds and
137.	Pendico 50EC	III	Reiss & Co., Accra	Reiss & Co., Accra	Pendimethalin (500g/l)	FRE/1410/00765G November 2014	Selective pre-emergent herbicide for the control of weeds in cereals, cotton and soybean
138.	Pendigan 400CS	II	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Pendimethalin (400g/l)	FRE/14100/00815G December 2014	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
139.	Pointer 276SL	II	VISTA 2000 Ltd	VISTA 2000 Ltd	Paraquat dichloride	FRE/15142/00848R	Non-Selective contact

			Accra	Accra	(276g/l)	June 2015	herbicide for the control of grasses and broadleaf weeds in soybean, corn, oil palm, rubber and rice
140.	Power 41SL	III	J. K. Duku Enterprise, Kumasi	J. K. Duku Enterprise, Kumasi	Glyphosate (41% w/w)	FRE/1498/00740G October 2014	Herbicide for the control of grasses and broadleaf weeds
141.	Pronil Plus SL	III	Bentronic Productions, Kumasi	Bentronic Productions, Kumasi	Propanil (360g/l) + 2, 4 D Amine Salt (200g/l)	FRE/1425/00782G November 2014	Selective herbicide for the control of grasses and broadleaf weeds in rice
142.	Propa Gold EC	II	Louis Dreyfus Commodities Ghana, Tema	Louis Dreyfus Commodities Ghana, Tema	Propanil (360g/l) + 2,4-D Amine (200g/l)	FRE/1355/00566G March 2013	Systemic herbicide for the control of broadleaf weeds in rice
143.	Propacal-Plus 480EC	II	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Propanil (240g/l) + 2, 4-D Isobutyl Ester (240g/l)	FRE/1543/00861G August 2015	Selective herbicide for the control of grasses and broadleaf weeds in rice
144.	Propaforce Plus EC	III	Jubaili Agrotec Ltd., Accra	Jubaili Agrotec Ltd., Accra	Propanil (36%) + 2,4-D Isobutyl Ester (20%)	FRE/15145/00830G June 2015	Herbicide for the control of weeds in rice
145.	Rainbow 25OD	III	Chemico Limited, Tema	Chemico Limited, Tema	Penoxsulam (250g/l)	FRE/1498/00740G October 2014	Herbicide for the control weeds in rice
146.	Rainamine 72SL	II	Rainbow Agrosiences Co Ltd, Accra	Rainbow Agrosiences Co Ltd, Accra	2,4-D Amine (720g/l)	FRE/1399/00541G March 2013	Herbicide for the control of broadleaf weeds in rice
147.	Rainpendim	III	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited, Accra	Pendimethalin (500g/l)	FRE/1565/00855G August 2015	Herbicide for the control of grasses and broadleaf weeds in maize and

							sugarcane
148.	Rainpropa Plus	III	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited, Accra	Propanil (360g/l) + 2,4 D Amine (200g/l)	FRE/1565/00856G August 2015	Herbicide for the control of <i>Amaranthus retroflexus</i> , <i>Digitaria spp.</i> , <i>Echinochloa spp.</i> , <i>Panicum spp.</i> in rice
149.	Rawepanil	III	Blue Anchor Farms and Enterprise, Accra	Blue Anchor Farms and Enterprise, Accra	Propanil (360g/l)	FRE/14146/00704G April 2014	Herbicide for the control of grasses and weeds in rice
150.	Rigold 432EC	III	Louis Dreyfus Commodities, Tema	Louis Dreyfus Commodities, Tema	Propanil (360g/l) + Triclorpyr (72g/l)	FRE/1355/00662G November 2013	Herbicide for the control of grasses and broadleaf weeds in rice
151.	Rival 360SL	III	Wienco (Gh.) Ltd, Accra	Wienco (Gh.) Ltd, Accra	Glyphosate (360 g/l)	FRE/1401/00820G December 2014	Herbicide for the control of annual and perennial grasses and broadleaf weeds
152.	Roundup 360SL	III	Louis Dreyfus Commodities, Ghana Ltd, Tema	Louis Dreyfus Commodities, Ghana Ltd, Tema	Glyphosate (360g/l)	FRE/1455/00732G October 2014	Herbicide for the control of annual and perennial broadleaf weeds and grasses
153.	Roundup 450 Turbo	III	Louis Dreyfus Commodities, Ghana Ltd, Tema	Louis Dreyfus Commodities, Ghana Ltd, Tema	Glyphosate (450g/l)	FRE/1455/00822G December 2014	Herbicide for the control of annual grasses and broadleaf weeds
154.	Roundup Biosec 72SG	III	Louis Dreyfus Commodities, Ghana Ltd,	Louis Dreyfus Commodities, Ghana	Glyphosate (720g/kg)	FRE/1555/00858G	Herbicide for the control of annual, perennial, grasses, sedges and

			Tema	Ltd, Tema		August 2015	broadleaf weeds in tree plantations and arable crops
155.	Sharp 480SL	III	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Glyphosate (480g/l)	FRE/1543/00860G August 2015	Herbicide for the control of annual and perennial grasses and broadleaf weeds in cereals and vegetables
156.	Shye Nwura SL	III	Bentronic Productions Kumasi	Bentronic Productions Kumasi	Glyphosate (41% w/w)	FRE/1425/00253G October 2014	Herbicide for the control of grasses and broadleaf weeds
157.	Sikosto 360SL	III	Kurama Company Limited, Accra	Kurama Company Limited, Accra	Glyphosate (360g/l)	FRE/1416/00771G November 2014	Non-selective herbicide for the control of annual, perennial grasses and broadleaf weeds
158.	Solito 320EC	III	Wienco Ghana Limited, Accra	Wienco Ghana Limited, Accra	Pretilachlor (30%) + Pyrebentoxim (2%)	FRE/1301/00533G March 2013	Selective herbicide for the control of and broadleaf weeds in rice
159.	Special 30WP	II	Louis Dreyfus Commodities Tema	Louis Dreyfus Commodities Tema	Diuron (560g/l) + Bromacil (240g/l)	FRE/1355/00564G March 2013	Herbicide for the control of weeds in pineapples
160.	Squad 500EC	II	Calli Ghana Company Ltd., Tema	Calli Ghana Company Ltd., Tema	Clomazone (150g/l) + Pendimethalin (300g/l)	FRE/1506/00929G December 2015	Pre-emergence herbicide for the control of grasses and broadleaf weeds in rice
161.	Stam F34EC	II	Chemico Limited, Tema	Chemico Limited, Tema	Propanil (360g/l)	FRE/1505/00900G August 2015	Herbicide for the control of post emergent annual weeds in rice

162.	Stomp 445CS	II	Cama Agro Consult, Accra	Cama Agro Consult, Accra	Pendimethalin (445g/l)	FRE/1498/00807G November 2014	Herbicide for the control of broadleaf weeds and grasses in maize, cotton and tomatoes
163.	Sun 2,4-D Amine 72SL	II	Wynca Sunshine Agric Products & Trading Company Limited, Accra	Wynca Sunshine Agric Products & Trading Company Limited, Accra	2, 4-D Amine (720g/l)	FRE/1357/00636G September 2013	Herbicide for the control of broadleaf weeds and sedges
164.	Sun 2,4-D PRO 560EC	II	Wynca Sunshine Agric Products & Trading Co., Ltd., Accra	Wynca Sunshine Agric Products & Trading Co., Ltd., Accra	2, 4-D Amine (560g/l)	FRE/1457/00756G November 2014	Herbicide for the control of broadleaf weeds and sedges
165.	Sun-Bromacil 80WP	III	Wynca Sunshine Agric Products & Trading Co., Limited, Accra	Wynca Sunshine Agric Products & Trading Co., Limited, Accra	Bromacil (800g/kg)	FRE/1557/00835G June 2015	Herbicide for the control of broadleaf weeds and grasses in pineapples
166.	Sun-Diuron 80WP	III	Wynca Sunshine Agric Products & Trading Co., Limited, Accra	Wynca Sunshine Agric Products & Trading Co., Limited, Accra	Diuron (800g/kg)	FRE/1557/00836G June 2015	Herbicide for the control of weeds in pineapples, mangoes and cashew
167.	Sunford 2,4-D SL	II	K. Adu Enterprise, Kumasi	K. Adu Enterprise, Kumasi	2, 4-D Amine salt (720g/l)	FRE/13131/00643G September 2013	Herbicide for the control of broadleaf weeds
168.	Sun-Paraquat 200SL	II	Wynca Sunshine Agric Products & Trading Co., Limited, Accra	Wynca Sunshine Agric Products & Trading Co., Limited, Accra	Paraquat dichloride (200g/l)	FRE/1557/00837R June 2015	Non-selective herbicide for the control of broadleaf weeds and grasses
169.	Sunphosate 360 SL	III	Wynca Sunshine Agric Products & Trading Co., Limited, Accra	Wynca Sunshine Agric Products & Trading Co., Limited, Accra	Glyphosate (360g/l)	FRE/1457/00750G November 2014	Herbicide for the control of broadleaf weeds and grasses

170.	Sunphosate 757 WSG	III	Wynca Sunshine Agric Products & Trading Co., Limited, Accra	Wynca Sunshine Agric Products & Trading Co., Limited, Accra	Glyphosate (757g/kg)	FRE/1457/00752G November 2014	Herbicide for the control of broadleaf weeds and grasses
171.	Sunfuron 75WDG	III	Wynca Sunshine Agric Products & Trading Co. Ltd, Accra	Wynca Sunshine Agric Products & Trading Co. Ltd, Accra	Nicosulfuron (750g/kg)	FRE/1457/00755G November 2014	Herbicide for the control of broadleaf weeds in cereals and vegetables
172.	Sunfuron 80WP	III	Wynca Sunshine Agric Products & Trading Co. Limited, Accra	Wynca Sunshine Agric Products & Trading Co. Limited, Accra	Nicosulfuron (800g/kg)	FRE/1457/00754G November 2014	Herbicide for the control of broadleaf weeds in cereals and vegetables
173.	Suprazone SC	II	Louis Dreyfus Commodities, Ghana Ltd, Tema	Louis Dreyfus Commodities, Ghana Ltd, Tema	Paraquat dichloride (200g/l)	FRE/1455/00729R October 2014	Non-selective herbicide for the control of broadleaf weeds and grasses
174.	Terbutor 500EC	III	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Metalachlor (333g/l) + Terbutryn (167g/l)	FRE/15100/00913G September 2015	Non-selective, pre-emergent herbicide for the control of weeds in cereals, cotton and tubers
175.	Topstar 400SC	III	Wienco Ghana Ltd., Accra	Wienco Ghana Ltd., Accra	Oxadiargyl (400g/l)	FRE/1301/00652G October 2013	Pre-emergent herbicide for the control of annual grasses and broadleaf weeds in rice
176.	Vezeir 240SL	III	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Imazethapyr (204g/l)	FRE/1410/00812G December 2014	Herbicide for control of annual, perennial grasses and broadleaf weeds in cereals and vegetables
177.	Vision 568WG	III	Calli Ghana Ltd., Tema	Calli Ghana Ltd., Tema	Amicarbozone (280g/kg) + Mesotrione	FRE/1506/00927G December 2015	Herbicide for the control of grasses and broadleaf weeds and sedges

					(288g/kg)		
178.	Weedall SL	III	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Glyphosate (480g/l)	FRE/1543/00862G August 2015	Selective herbicide for the control of annual, perennial grasses and broadleaf weeds in cereals and vegetables
179.	Wiper 720SL	II	Adama west Africa Ltd., Accra	Adama west Africa Ltd., Accra	2,4-D Amine (720g/l)	FRE/14100/00816G December 2014	Herbicide for the control of broadleaf weeds and sedges in cereals
180.	Wynna SL	III	Wynca Sunshine Agric Products & Trading Co. Ltd, Accra	Wynca Sunshine Agric Products & Trading Co. Ltd, Accra	Glyphosate (410g/l)	FRE/1457/00751G November 2014	Non-selective herbicide for the control of annual and perennial broadleaf weeds in cereals and vegetables
181.	Wynna 360SL	III	Wynca Sunshine Agric Products & Trading, Accra	Wynca Sunshine Agric Products & Trading, Accra	Glyphosate (360g/l)	FRE/1457/00753G November 2014	Herbicide for the control of annual and perennial broadleaf weeds and grasses
182.	Zoomer 390SC	III	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Oxyfluorfen (300g/l)+ Glyphosate (360g/l)	FRE/15100/00912G September 2015	Herbicide for the control of annual and perennial broadleaf weeds and grasses in maize and vegetables

Appendix 2.3 Fungicides

1.	Acticide EPW	III	BBC Industrials Co. Ltd., Accra	BBC Industrials Co. Ltd., Accra	Diuron (20%) + Carbendazim (9%) + 2-octyl-2H-isothiazol-3-one (2.8%)	FRE/1520/00950G December 2015	Fungal and algal paint preservative
2.	Agrithane 80 WP	III	Agrimat Limited, Accra	Agrimat Limited, Accra	Mancozeb (800g/kg)	FRE/1302/00628G September 2013	Fungicides for the control of leaf spots, mildew, leaf blight and scab in vegetables
3.	Amistar Top 325SC	III	Wienco Ghana Limited, Accra	Wienco Ghana Limited, Accra	Azoxystrobin (200g/l) + Difenoconazole (125g/l)	FRE/1301/00535G March 2013	Systemic fungicide for the control of early blight, late blight, powdery mildew, leaf spot, anthracnose and rust in vegetables
4.	Athelete 80WP	III	Louis Dreyfus Commodities Ghana Ltd, Tema	Louis Dreyfus Commodities Ghana Ltd, Tema	Fosetyl-aluminium (800g/kg)	FRE/1355/00567G March 2013	Fungicide for the control of mildew and <i>Phytophthora</i> diseases in vegetables, fruits and pineapples
5.	Atracol 70WP	III	Bayer S.A, Ghana, Accra	Bayer S.A, Ghana, Accra	Propineb (700g/kg)	FRE/13137/00672G December 2013	Fungicide for the control of diseases in vegetables
6.	Benco 80 WP	III	Bentronic Productions, Kumasi	Bentronic Productions, Kumasi	Mancozeb (800g/kg)	FRE/1425/00783G November 2014	Fungicide for control of leaf spots, mildew, leaf blight and scab in vegetables, fruits and

							ornamentals
7.	Bosun 300SC	III	Jingbo Agrochemicals Tech. Gh. Co. Ltd., Accra.	Jingbo Agrochemicals Tech. Gh. Co. Ltd., Accra.	Boscalid (20%) + Kresoxim-methyl (10%)	FRE/15139/00891G August 2015	Fungicide for the control of powdery mildew, anthracnose, mould, rust and leaf spots in vegetables and fruits
8.	Calthio Mix 485WS	II	Calli Ghana Company Ltd., Tema	Calli Ghana Company Ltd., Tema	Imidacloprid (350g/kg) + Thiram (100g/kg) + Metalaxyl-M (35g/kg)	FRE/1506/00931G December 2015	Fungicide for the control of diseases in maize
9.	Calliete 80WP	III	Calli Ghana Company Limited, Tema	Calli Ghana Company Limited, Tema	Fosetyl aluminium (800g/kg)	FRE/1406/00747G November 2014	Systemic fungicide for the control of <i>phytophthora</i> in pineapple
10.	Caldo Bordeles Valles 20WP	III	Miqdadi Company Limited, Accra	Miqdadi Company Limited, Accra	Bordeaux mixture (Copper (II) Sulphate + Ca (OH ₂) (200g/kg)	FRE/15137/00938/G December 2015	Fungicide for the control of diseases in vegetables and fruits
11.	Callis 400OL	III	Calli Ghana Company Limited, Tema	Calli Ghana Company Limited, Tema	Thiophanate methyl (400g/l)	FRE/1406/00746G November 2014	Fungicide for the control of <i>yellow</i> and <i>black sigatoka</i> in bananas
12.	Carbendazim 50WP	III	Agrimat Limited, Accra	Agrimat Limited, Accra	Carbendazim (500g/kg)	FRE/1302/00552G March 2013	Fungicide for the control of leaf spots, mildew, leaf blight and

							scab in vegetables
13.	Champion WP	III	Chemico Limited, Tema	Chemico Limited, Tema	Copper Hydroxide (77%)	FRE/1405/00688G March 2014	Fungicide for the control of <i>P. palmivora</i> and <i>P. megakarya</i> in cocoa and coffee
14.	Chemoliette 80WP	III	Chemico Limited, Tema	Chemico Limited, Tema	Fosetyl aluminium (800g/kg)	FRE/1405/00690G March 2014	Systemic fungicide for the control of phytophthora diseases in pineapple
15.	Cuprofix 30 Disperse	II	Chemico Limited, Tema	Chemico Limited, Tema	Mancozeb (30%) + Metallic Copper (12%)	FRE/1405/00689G March 2014	Fungicide for the control of powdery mildew, anthracnose, leaf and fruit spots in citrus, mango and vegetables
16.	Curenox 50WP	III	Miqdadi Company Limited, Accra	Miqdadi Company Limited, Accra	Copper Oxychloride (50%)	FRE/15137/00939/G December 2015	Fungicide for the control of diseases in fruits and vegetables
17.	Damazeb 80WP	III	Vista 2000 Limited, Accra	Vista 2000 Limited, Accra	Mancozeb (800g/kg)	FRE/15142/00849R June 2015	Fungicide for the control of diseases in soybean, groundnut, pepper, banana, melon, tomatoes and tuber

							crops
18.	Dithane M45 WP	III	Chemico Limited, Tema	Chemico Limited, Tema	Mancozeb (800g/kg)	FRE/1505/00902G August 2015	Fungicide for the control of leaf spots, mildew, leaf blight and scab of fruits and vegetables
19.	Dizcozeb 80WP	III	Dizengoff Ghana Limited, Accra	Dizengoff Ghana Limited, Accra	Mancozeb (800g/kg)	FRE/1308/00620G September 2013	Fungicides for the control of leaf spots, mildew, leaf blight and scab in vegetables
20.	Fantic Plus 69WP	III	Calli Ghana Co. Ltd., Tema	Calli Ghana Co. Ltd., Tema	Cuprous oxide (60%) + Benalaxyl-M (9%)	FRE/1306/00557G March 2013	Fungicide for the control of <i>Phytophthora megakarya</i> in cocoa
21.	Foko Super 80WP	III	Thomas Fosu Enterprise, Accra	Thomas Fosu Enterprise, Accra	Mancozeb (800g/kg)	FRE/1390/00546G March 2013	Fungicide for the control of diseases in vegetables
22.	Folpan 50WP	III	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Folpet (500g/l)	FRE/14100/00760G November 2014	Fungicide for the control of diseases in vegetables
23.	Fungikill 50WP	III	Chemico Ltd, Tema	Chemico Ltd, Tema	Copper (35%) + Metalaxyl (15%)	FRE/1505/00926G October 2015	Fungicide for the control of <i>P. palmivora</i> and <i>P. megakarya</i> in cocoa
24.	Goldazim 500SC	III	Kurama Company Limited	Kurama Company Limited	Carbendazim (500g/l)	FRE/1416/00773G November 2014	Systemic fungicide for the control of diseases in fruits and vegetables

25.	Ivory 80WP	III	Calli Ghana Company Ltd., Tema	Calli Ghana Company Ltd., Tema	Mancozeb (800g/kg)	FRE/1306/00530G March 2013	Fungicide for the control of diseases in vegetables and fruits
26.	Kenmaneb 80WP	III	K. Adu Enterprise, Kumasi	K. Adu Enterprise, Kumasi	Maneb (80%)	FRE/13131/00644G September 2013	Fungicide for the control of leaf spots, downy mildew and fruit rot in vegetables
27.	Kentan 40WG	III	Calli Ghana Company Limited, Tema	Calli Ghana Company Limited, Tema	Copper Hydroxide (400g/kg)	FRE/1306/00641G September 2013	Fungicide for the control of <i>Phytophthora megakarya</i>
28.	Kilazeb 80WP	III	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Mancozeb (800g/kg)	FRE/1543/00877G June 2015	Fungicide for the control of leaf spots, mildew, leaf blight and scab in vegetables and fruits
29.	Kocide 2000 WP	III	Calli Ghana Limited, Accra	Calli Ghana Limited, Accra	Cupric hydroxide (53.8%)	FRE/1406/00798G December 2014	Fungicide for the control diseases in cocoa
30.	Kofazeb 80WP	III	Kofamob Agro Services Ltd, Kumasi	Kofamob Agro Services Ltd, Kumasi	Mancozeb (800g/kg)	FRE/1364/00613G August 2013	Fungicide for the control of leaf spots, mildew, leaf blight and scab in vegetables
31.	Mancozan Super	III	Louis Dreyfus	Louis Dreyfus	Mancozeb (640g/kg)	FRE/1355/00569G	Fungicide for the

	WP		Commodities, Ghana Ltd, Tema	Commodities, Ghana Ltd, Tema	+ Metalaxyl (80g/kg)	March 2013	control of diseases in vegetables
32.	Manlax	III	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited, Accra	Mancozeb (64%) + Metalaxy (8%)	FRE/1565/00857G June 2015	Fungicide for the control of downy mildew, late and early blight in lettuce, onions and sweetpotatoes
33.	Mawelaxyl 72WP	III	Blue Anchor Farms and Enterprise, Accra	Blue Anchor Farms and Enterprise, Accra	Copper Oxide (60%)+ Metalaxyl (12%)	FRE/14146/00705G April 2014	Fungicide for the control of diseases in vegetables
34.	Merpan 50WP	III	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Captan (500g/kg)	FRE/14100/00761G November 2014	Fungicide for the control of diseases in fruits, and vegetables
35.	Metalm 72WP	III	Kurama Company Limited, Accra	Kurama Company Limited, Accra	Cuprous oxide (60%) + Metalaxyl (12%)	FRE/1416/00774G November 2014	Fungicide for the control of black pod disease in cocoa
36.	Navito 300SC	III	Bayer S.A, Ghana, Accra	Bayer S.A, Ghana, Accra	Terbuconazole (200g/l) + Trifloxystrobin (100g/l)	FRE/13137/00673G December 2013	Fungicide for the control of diseases in vegetables
37.	Nordox Super 75 WG	III	Wienco Ghana Limited, Accra	Wienco Ghana Limited, Accra	Cuprous oxide (86%)	FRE/1401/00699G March 2014	Fungicide for the control of <i>Phytophthora palmivora</i> and <i>Phytophthora megakarya</i> on cocoa

38.	Rainmancoz 80WP	III	Rainbow Agrosciences Co Ltd, Accra	Rainbow Agrosciences Co Ltd, Accra	Mancozeb (800g/kg)	FRE/1399/00542G March 2013	Fungicide for the control of leaf spots, mildew and leaf blight in vegetables
39.	Raintebzol 430SC	III	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited, Accra	Tebuconazole (430g/l)	FRE/1399/00606G July 2013	Fungicide for the control of rust, leaf spots, mildew, leaf blight in fruits and vegetables
40.	Raintop-M 70WP	III	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited, Accra	Thiophanate methyl (700g/kg)	FRE/1399/00607G July 2013	Fungicide for the control of leaf spots, mildew, leaf blight and scab in vegetables
41.	Seedrex WP	III	The Candel Company Limited, Accra	The Candel Company Limited, Accra	Permethrin (33%) + Carbendazim (15%) + Chlorothalonil (12%)	FRE/1355/00589G April 2013	Fungicide for seed treatment
42.	Shavit F 715WP	III	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Folpet (700g/kg) + Triadimenol (1.5g/kg)	FRE/14100/00759G November 2014	Fungicide for the control of diseases in vegetables
43.	Sphinx star 480WDG	III	Adama West Africa Ltd, Accra	Adama West Africa Ltd, Accra	Dimethomorph (80g/l) + Chlorothalonil (400g/l)	FRE/14100/00818G December 2014	Fungicide for the control of diseases in vegetables
44.	Skyrobin 50WG	III	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited,	Azoxystrobin (500g/kg)	FRE/1399/00646G September 2013	Fungicide for the control of mildew, leaf blight, scab and

				Accra			anthracnose in vegetables
45.	Skystar 280SC	III	Rainbow AgroSciences Company Limited, Accra	Rainbow AgroSciences Company Limited, Accra	Azoxystrobin (20%) + Propiconazole (8%)	FRE/1399/00645G September 2013	Fungicide for the control of leaf spots, mildew, leaf blight, scab and anthracnose in vegetables
46.	Suncozeb 80WP	III	Wynca Sunshine Agric Products & Trading Co Ltd, Accra	Wynca Sunshine Agric Products & Trading Co Ltd, Accra	Mancozeb (800kg/kg)	FRE/1357/00637G September 2013	Fungicide for the control of leaf spots, mildew, leaf blight and scab in vegetables
47.	Thiopsin 70WP	III	Badu Kaakyire Agrochemical Co. Ltd., Kumasi	Badu Kaakyire Agrochemical Co. Ltd., Kumasi	Thiophanate-methyl (70%)	FRE/1381/00551G March 2013	Fungicide for the control of diseases in crops
48.	Tilt	III	Calli Ghana Company Limited, Tema	Calli Ghana Company Limited, Tema	Propiconazole (250g/l)	FRE/1406/00745G November 2014	Fungicide for the control of fungal diseases in banana
49.	Top Cop	III	Chemico Limited, Tema	Chemico Limited, Tema	Sulphur (50%) + Copper (8%)	FRE/1505/00903G August 2015	Fungicide / miticide for the control of diseases in vegetables
50.	Trimangol 80WP	III	Chemico Limited, Tema	Chemico Limited, Tema	Maneb (800g/kg)	FRE/1505/00901G August 2015	Fungicide for the control of leaf spot, downy mildew, leaf blight and scab of cereals, vegetables
51.	Victory 72WP	III	Dizengoff Ghana	Dizengoff Ghana	Metalaxyl (8%) +	FRE/1308/00616G September 2013	Fungicide for the control of fungal

			Limited, Accra	Limited, Accra	Mancozeb (64%)		diseases in vegetables and fruits
52.	Volley 88OL	III	Cama Agro Consulting Limited, Accra	Cama Agro Consulting Limited, Accra	Fenpropimorph (880g/l)	FRE/1598/00880G August 2015	Fungicide for the control of <i>Mycosphaerella musicola</i> and <i>Mycosphaerella fijiensis</i> in banana
53.	Zerofly Storage Bag	III	Kofamob Agro Services Ltd, Kumasi	Kofamob Agro Services Ltd, Kumasi	Mancozeb (800kg/g)	FRE/13125/00659G November 2013	Fungicide for the control of leaf spots, mildew, leaf blight and scab in vegetables

Appendix 2.4

Other pesticides

1.	Callel 480SL	III	Calli Ghana Co. Ltd., Tema	Calli Ghana Co. Ltd., Tema	Ethephon (280g/l)	FRE/1406/00748G November 2014	Plant growth regulator for de-greening of pineapple
2.	Callel 5PA	III	Calli Ghana Co. Ltd., Tema	Calli Ghana Co. Ltd., Tema	Ethephon (5%)	FRE/1506/00919G September 2015	Plant growth regulator for de-greening of pineapple
3.	Chemophon 480SL	III	Chemico Ltd, Tema	Chemico Ltd, Tema	Ethephon (480g/l)	FRE/1505/00904G August 2015	Plant growth regulator for de-greening of pineapples
4.	Hervextra PA	IV	Louis Dreyfus Commodities Ghana Ltd, Tema	Louis Dreyfus Commodities Ghana Ltd, Tema	Ethephon (10%)	FRE/1355/00565G March 2013	Plant growth regulator for de-greening of pineapples
5.	Mat 480SL	III	Louis Dreyfus Commodities Ghana Ltd, Tema	Louis Dreyfus Commodities Ghana Ltd, Tema	Ethephon (480g/l)	FRE/1455/00727G October 2014	Plant growth regulator for de-greening of pineapples
6.	RyzUp 40SG	U	Challux Ltd, Accra	Challux Ltd, Accra	Gibberellic acid 1.279 billion ITU/l	FRE/1480/00743G November 2014	Plant growth regulator for banana
7.	Carakol P	III	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Acetic metaldehyde (50g/kg) + Denatonium benzoate (0.3g/kg)	FRE/13100/00574G March 2013	Molluscicide for the control of snails, slugs and other gastropods
8.	Brody Fresh Bait	II	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Brodifacoum (0.005g/kg) + Denatonium	FRE/13100/00578G March 2013	Rodenticide for the control of rodents and mites

					benzoate (0.001g/kg)		
9.	Brody Pillow-shaped block	II	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Brodifacoum (0.005g/kg) + Denatonium benzoate (0.001g/kg)	FRE/13100/00579G March 2013	Rodenticide for the control of rodents and mites
10.	Agrocelhone NE	II	Spica Ghana Limited	Spica Ghana Limited	Dichloropropene (60.8%) + Chloropicrin (33.3%)	FRE/13136/00665G November 2013	Nematicide for the control of nematodes
11.	Compact 10GR	II	Dizengoff Ghana Limited, Accra	Dizengoff Ghana Limited, Accra	Ethoprophos (10%)	FRE/1308/00622G September 2013	Nematicide for the control of nematodes in pineapples and vegetables
12.	Marshal 480EC	II	Chemico Ltd., Tema	Chemico Ltd., Tema	Carbosulfan (480g/l)	FRE/1505/00906G August 2015	Nematicide/ insecticide for the control of scale, nematodes and symphylids in pineapple
13.	Rugby 10G	II	Chemico Ltd., Tema	Chemico Ltd., Tema	Cadusafos (10%)	FRE/1505/00905G August 2015	Nematicide /insecticide for the control of nematodes
14.	Bladbuff 5	U	Dizengoff, Gh. Ltd	Dizengoff, Gh. Ltd	Phosphoric acid + alcohol ethoxylate	FRE/1408/00715G October 2014	An adjuvant for use as a wetting and spreading agent for contact and systemic fungicides and

							herbicides
15.	Break-thru S240	U	Evonik West Africa Accra.	Evonik West Africa Accra.	Polyether- polymethylsiloxane- copolymer (1000g/l)	FRE/14157/00784G November 2014	Surfactant to improve the spreading, wetting and penetration of water based pesticide formulations on leaves of vegetables, fruits and arable crops
16.	EOS	U	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	White summer spray oil (800g/l)	FRE/14100/00762G November 2014	Adjuvant for public health use
17.	Stockosorb 660	U	Evonik West Africa Accra.	Evonik West Africa Accra.	Micro/Menu/ XL (Potassium Polyacrylate)	FRE/14157/00785G November 2014	To improve water retention in soil
18.	BPC68950	III	Baker Hughes/Tullow Ghana Ltd., Accra	Baker Hughes/Tullow Ghana Ltd., Accra	2,2-dibromo-2- cyanoacetamide	FRE/15181/00949/G December 2015	Biocide against general anaerobic and sulphate reducing bacteria
19.	PFR8427 Rocide	III	Baker Hughes/Tullow Ghana Ltd., Accra	Baker Hughes/Tullow Ghana Ltd., Accra	5-chloro-2-methyl-4- isothiazolin-3-one 5% + 2-methyl-2H- isothiazol-3-one (5%)	FRE/15181/00946/G December 2015	Bactericide for the inhibition of the growth of bacteria
20.	Water Biocide	U	Baker Hughes Gh. limited	Baker Hughes Gh. limited	Glutaraldehyde (30- 60%)	FRE/15181/00945/G December 2015	Biocide for the treatment of produced water system offshore for safe over boarding

21.	XC 82205	III	Baker Hughes/Tullow Ghana Ltd., Accra	Baker Hughes/Tullow Ghana Ltd., Accra	3,3-methylenebis-5methoxazolidine (60%)	FRE/15181/00947/G December 2015	Bactericide for the inhibition of the growth of bacteria
22.	XC 85293	III	Baker Hughes/Tullow Ghana Ltd., Accra	Baker Hughes/Tullow Ghana Ltd., Accra	Phosphonium Quaternary Salt (60%)	FRE/15181/00948/G December 2015	Bactericide for the inhibition of the growth of bacteria
23.	Promex DB-20	II	BBC Industrials Co. Ltd., Accra	BBC Industrials Co. Ltd., Accra	2,2-Dibromo-3-nitrilopropionamide (20%)	FRE/15120/00950/G December 2015	Bactericide/ fungicide for the control of bacteria and fungus in aqueous solutions
24.	Promex CHS-3	II	BBC Industrials Co. Ltd., Accra	BBC Industrials Co. Ltd., Accra	1,6-Dihydroxy-2, 5-dioxahexane (20%) + 5-chloro-2-methyl-4-isothiazolin-3-one (1%) + 2-methyl-4-isothiazolin-3-one (1%)	FRE/15120/00952/G December 2015	Bactericide/ fungicide for the control of bacteria and fungus in aqueous solutions

Appendix 2.5 List of provisionally cleared Insecticides

No.	Product Name	WHO Class	Firm Registering Pesticide	Local Distributor (s)	Active Ingredient (s)	EPA Registration Number	Uses
1.	Abolambda 2.5EC	II	Aboboyaa Enterprise Ltd., Kumasi.	Aboboyaa Enterprise Ltd., Kumasi.	Lambda-cyhalothrin (2.5%)	PCL/14113/00618G March 2015	Insecticide for the control of insect pests in sugarcane, cereals and vegetables
2.	Agro Oil	III	Agromonti Co. Ltd., Accra	Agromonti Co. Ltd., Accra	White Mineral Oil (100%)	PCL/15173/00714/G November 2015	Insecticide/ adjuvant/surfactant for the control of citrus bud mites, red spider mite, purple mite, aphids, whitefly, moth and worms
3.	Agroxin	II	Jubaili Agrotec Ltd., Kumasi	Jubaili Agrotec Ltd., Kumasi	Aluminium Phosphide (57%)	PCL/15145/00655R August 2015	Insecticide for the control of insect pests of stored grains
4.	Akate Aduro 27EC	II	Dizengoff Ghana Limited, Accra.	Dizengoff Ghana Limited, Accra.	Bifenthrin (27g/l)	PCL/1408/00562G March 2015	Insecticide for the control of capsid bugs in cocoa
5.	Ataka Super EC	III	Wynca Sunshine Agric Prdt & Trad. Co. Ltd, Accra.	Wynca Sunshine Agric Prdt & Trad. Co. Ltd, Accra.	Emamectin Benzoate (19.2g/l)	PCL/1457/00595G March 2015	Insecticide for the control of diamondback moth and cotton bollworm in cabbage and cotton
6.	Belt Expert 480SC	II	Bayer Crop Science, Dzorwulu, Accra	Bayer Crop Science, Dzorwulu, Accra	Flubendiamide (420g/l) + Thiacloprid (240g/l)	PCL/15137/00662G June 2015	Insecticide for the control of insect pests in cotton
7.	D Lion Akate	II	Dorakt Company Limited,	Dorakt Company	Thiamethoxam (350g/l)	PCL/1569/00698G	Insecticide for control of

	Global 4000		Kumasi	Limited, Kumasi		August 2015	cocoa mirids
8.	Deltacal 12.5EC	II	Calli Ghana, Tema	Calli Ghana, Tema	Deltamethrin (12.5g/l)	PCL/1506/00716G December 2015	Insecticide for the control of <i>Helicoverpa armigera</i> and whiteflies in green beans and tomatoes
9.	Dressforce DS	II	Jubaili Agrotec Ltd., Accra	Jubaili Agrotec Ltd., Accra	Imidacloprid (20%)+ Metalaxyl-M (20%) + Tebuconazole (2%)	PCL/15145/00654G August 2015	Insecticide/ fungicide for seed treatment
10.	Flash Akate	II	Chemico Limited Tema	Chemico Limited Tema	Sulfoxaflor (20g/l)	PCL/1505/00710G October 2015	Insecticide for the control of mirids in cocoa
11.	Galil 300SC	II	Adama West Africa Ltd, Accra.	Adama West Africa Ltd, Accra.	Imidacloprid (250g/l) + Bifenthrin (50g/l)	PCL/15100/00647G March 2015	Insecticide for the control of mirids in cocoa
12.	Imiforce SL	II	Jubaili Agrotec Ltd, Kumasi	Jubaili Agrotec Ltd, Kumasi	Imidacloprid (200g/l)	PCL/15145/00656G August 2015	Insecticide for the control of plant hoppers in rice, aphids and whiteflies in tomatoes
13.	Imiforce Plus	II	Jubaili Agrotec Ltd, Kumasi.	Jubaili Agrotec Ltd, Kumasi.	Imidacloprid (15%) + Lambda-cyhalothrin (5%)	PCL/14145/00602G March 2015	Insecticide/ acaricide for the control of insects
14.	K-33	II	Asuboa Wood Treatment Ltd, Accra.	Asuboa Wood Treatment Ltd, Accra.	Chromic acid (99.9%) + Copper Oxide (98.6%) +	PCL/15174/00686G August 2015	Insecticide/ fungicide for the control of

					Arsenic acid (75%)		insects and fungal decay in timber
15.	Laraforce 2.5EC	II	Jubaili Agrotec Ltd, Kumasi	Jubaili Agrotec Ltd, Kumasi	Lambda- cyhalothrin (2.5%)	PCL/15145/00658G August 2015	Insecticide for the control of insect pests in vegetables and pulses
16.	Lionforce EC	II	Jubaili Agrotec Ltd, Kumasi	Jubaili Agrotec Ltd, Kumasi	Cypermethrin (3%) + Dimethoate (25%)	PCL/15145/00657G August 2015	Insecticide for the control of aphids, mealybugs and whiteflies in okro and pepper
17.	Pilactara 240SC	II	PakGhana Ltd., Kumasi	PakGhana Ltd., Kumasi	Thiamethoxam (97% w/w)	PCL/14165/00622G March 2015	Insecticide for the control of insect pests in sweetpotatoes and cotton
18.	Plustoxin	II	Joyful Agro Services, Kumasi	Joyful Agro Services, Kumasi	Aluminium Phosphide (57%)	PCL/1486/00613R March 2015	Insecticide for the control of insect pests in stored grains
19.	Porselen 5SG	III	Rainbow AgroSciences Co. Ltd., Accra	Rainbow AgroSciences Co. Ltd., Accra	Emamectin Benzoate (5%)	PCL/1599/00666G August 2015	Insecticide for the control of worms and insect pests in cabbage
20.	Pridapod	II	USICO Gh. Ltd, Accra.	USICO Gh. Ltd, Accra.	Imidacloprid (200g/l)	PCL/14138/00624G March 2015	Insecticide for the control of mirids in cocoa
21.	Protocol EC	II	Altimate Agrochem Co. Ltd., Accra	Altimate Agrochem Co. Ltd., Accra	Acetamiprid (15g/l) + Lambda-cyhalothrin (20g/l)	PCL/15121/00717G November 2015	Insecticide for the control of insect pests in rice, corn, cotton, beans and leafy vegetables
22.	Pyrical 5G	II	Calli Ghana Company Ltd, Tema.	Calli Ghana Company Ltd, Tema.	Chlorpyrifos-ethyl (50g/kg)	PCL/1406/00623G	Insecticide for the control of insect pests in

						March 2015	vegetables
23.	Regent 200SC	II	Cama Agro Consulting Ltd., Accra	Cama Agro Consulting Ltd., Accra	Fibronil (200g/l)	PCL/1598/00678G August 2015	Insecticide for the control of mirids in cocoa
24.	Rocket EC	II	Jubaili Agrotec Limited, Kumasi	Jubaili Agrotec Limited, Kumasi	Chlorpyrifos (20%)	PCL/15145/00709G December 2015	Insecticide for the control of insect pest in cotton, citrus and vegetables
25.	Sun-Docarb SC	II	Wynca Sunshine Agric. Products & Trading Co. Ltd., Accra.	Wynca Sunshine Agric. Products & Trading Co. Ltd., Accra.	Indoxacarb (150g/l)	PCL/1557/00688G August 2015	Insecticide for the control of bollworms, caterpillars and diamondback moth in cotton, cabbage and rice
26.	Sun-Lambda EC	II	Wynca Sunshine Agric. Products & Trading Co. Ltd., Accra.	Wynca Sunshine Agric. Products & Trading Co. Ltd., Accra.	Lambda-cyhalothrin (2.5g/l)	PCL/1557/00690G August 2015	Insecticide for the control of diamondback moth and cotton bollworms in cabbage and cotton
27.	Sun-Omama SC	II	Wynca Sunshine Agric. Products & Trading Co. Ltd., Accra.	Wynca Sunshine Agric. Products & Trading Co. Ltd., Accra.	Imidacloprid (30g/l)	PCL/1557/00687G August 2015	Insecticide for the control of diamondback moth, bollworms and caterpillars in cabbage and cotton
28.	Sun-Thiame WDG	II	Wynca Sunshine Agric. Products & Trading Co. Ltd., Accra.	Wynca Sunshine Agric. Products & Trading Co. Ltd., Accra.	Thiamethoxam (25%)	PCL/1557/00689G August 2015	Insecticide for the control of plant hoppers and aphids in rice and cotton
29.	Sunpyram 20WG	II	Wynca Sunshine Agric Prdt & Trad. Co. Ltd, Accra.	Wynca Sunshine Agric Prdt & Trad. Co. Ltd, Accra.	Nitenpyram (20%)	PCL/1457/00596G March 2015	Insecticide for the control of external parasites of livestock and pets

30.	Supercare SC	II	Agromonti Co. Ltd., Accra	Agromonti Co. Ltd., Accra	Beta-cyfluthrin (12.5%)	PCL/15173/00713G November 2015	Insecticide for the control of insect pest in stored grains and household pests
31.	Supergold ULV	II	Altimate Agrochemicals Co. Ltd, Accra.	Altimate Agrochemicals Co. Ltd, Accra.	Deltamethrin (0.27%)	PCL/15173/00683G August 2015	Insecticide for the control of mosquitoes, cockroaches, bugs and ants
32.	Tabard Aerosol	III	Acorn Products (Pty) Limited, Accra	Acorn Products (Pty) Limited, Accra	(N, N-dimethyl-M-Toluamide)	PCL/15176/00705G September 2015	Insect repellent
33.	Tabard Mosquito and Insect Repellant	III	Acorn Products (Pty) Limited, Accra	Acorn Products (Pty) Limited, Accra	(N, N-dimethyl-M-Toluamide, 195mg)	PCL/15176/00706G September 2015	Insect Repellent
34.	Viper 80EC	III	Calli Ghana Ltd., Tema	Calli Ghana Ltd., Tema	Indoxacarb (60g/l) + Acetamiprid (20g/l)	PCL/1506/00707G September 2015	Insecticide for control of cocoa mirids

Appendix 2.6 List of provisionally cleared Herbicides

No.	Product Name	WHO Class	Firm Registering Pesticide	Local Distributor (s)	Active Ingredient (s)	EPA Registration Number	Uses
1.	Aboextra 72SL	III	Aboboyaa Enterprise, Kumasi.	Aboboyaa Enterprise, Kumasi.	2,4-D Amine Salts (720g/l)	PCL/15113/00645G March 2015	Herbicide for the control of broadleaf weeds in rice, maize, sorghum, millet and sugarcane
2.	Abozin 50SC	III	Aboboyaa Enterprise, Kumasi.	Aboboyaa Enterprise, Kumasi.	Atrazine (500g/l)	PCL/15113/00644G March 2015	Herbicide for the control of grasses and broadleaf weeds in crops
3.	Adowura SL	III	Biragosa Enterprise, Kumasi	Biragosa Enterprise, Kumasi	Glyphosate (41%)	PCL/84/00611G March 2015	Herbicide for the control of weeds
4.	Adwumaden Ye	III	Pakutin Enterprise	Pakutin Enterprise	Glyphosate (360g/l)	PCL/15166/00640G March 2015	Herbicide for the control of grasses and broadleaf weeds
5.	Adwumaden 41SL	III	S.O. Ansah Enterprise, Kumasi	S.O. Ansah Enterprise, Kumasi	Glyphosate (410g/l)	PCL/15144/00648G March 2015	Herbicide for the control of grasses and broadleaf weeds
6.	Adwumapapa	III	Darseck Farm & Agrochemical Ent. Ltd.	Darseck Farm & Agrochemical Ent. Ltd.	Glyphosate (480g/l)	PCL/15168/00643G March 2015	Herbicide for the control of grasses and broadleaf weeds

7.	Altisate 41SL	III	Altimate Agrochemical Co. Ltd., Accra	Altimate Agrochemical Co. Ltd., Accra	Glyphosate (410g/l)	PCL/15121/00718G November 2015	Herbicide for control of grasses and broadleaf weeds
8.	Altizone Super 20SL	II	Altimate Agrochemicals Co. Ltd, Accra	Altimate Agrochemicals Co. Ltd, Accra	Paraquat dichloride (200g/l)	PCL/15121/00681R August 2015	Herbicide for the control of broadleaf weeds in crops
9.	Aniphosate 41SL	III	Asantepon Farms, Kade	Asantepon Farms, Kade	Glyphosate (410g/l)	PCL/14122/00614G March 2015	Herbicide for the control of weeds
10.	Arrow 400OD	III	Dizengoff Ghana Limited, Accra.	Dizengoff Ghana Limited, Accra.	Nicosulfuron (40g/l)	PCL/1508/00664G August 2015	Herbicide for the control of grasses and broadleaf weeds in crops
11.	Atraplus 600SC	III	Rainbow AgroSciences Co., Ltd., Accra	Rainbow AgroSciences Co., Ltd., Accra	Atrazine (300g/l) + Terbutylazine (300g/l)	PCL/1499/00615G March 2015	Herbicide for the control of weeds in maize and sorghum
12.	Atrazine 500SC	III	Chemico Limited, Tema.	Chemico Limited, Tema.	Atrazine (500g/l)	PCL/1505/00702G August 2015	Herbicide for the control of broadleaf weeds and grasses in maize, sorghum and pineapples
13.	Atrazine 80WP	III	Chemico Limited, Tema.	Chemico Limited, Tema.	Atrazine (800g/kg)	PCL/1505/00701G August 2015	Herbicide for the control of broadleaf weeds and grasses in maize, sorghum and pineapples
14.	Batrazine 80WP	III	B. Kaakyire Agrochemical Co., Limited, Kumasi	B. Kaakyire Agrochemical Co., Limited, Kumasi	Atrazine (800g/kg)	PCL/1581/00651G June 2015	Herbicide for the control of grasses in maize, sorghum and pineapples

15.	Bellazine 500SC	III	Chemico Limited, Tema.	Chemico Limited, Tema.	Atrazine (250g/l) + Cyanazine (250g/l)	PCL/1505/00700G August 2015	Herbicide for the control of annual, perennial broadleaf weeds and grasses in maize, sorghum and pineapples
16.	Bi-Fla 48SL	III	Nadnic Enterprise, Kumasi	Nadnic Enterprise, Kumasi	Glyphosate (480g/l)	PCL/15169/00646G September 2015	Herbicide for the control of annual, perennial grasses and broadleaf weeds in cereals and vegetables
17.	Bonquat 276SL	II	Bon Agrochemicals Co., Kumasi	Bon Agrochemicals Co., Kumasi	Paraquat dichloride (276g/l)	PCL/15149/00719R December 2015	Herbicide for control of grasses and broadleaf weeds in cereals and vegetables
18.	Bonzine 80WP	II	Bon Agro Company Limited, Somanya	Bon Agro Company Limited, Somanya	Atrazine (800g/kg)	PCL/15149/00720/G December 2015	Herbicide for the control of weeds in cereals and tuber crops
19.	Bonzine Plus WP	III	Bon Agrochemicals Co., Kumasi	Bon Agrochemicals Co., Kumasi	Nicosulfuron (40g/kg) + Atrazine (750g/kg)	PCL/15149/00721G December 2015	Herbicide for the control of grasses and broadleaf weeds in maize
20.	Clear All	III	Facts Agro Inputs, Accra.	Facts Agro Inputs, Accra.	Glyphosate (95%)	PCL/14161/00635G March 2015	Herbicide for the control of annual and perennial weeds

21.	Clearforce	III	Jubaili Agrotec Ltd, Kumasi.	Jubaili Agrotec Ltd, Kumasi.	Glyphosate (250g/l) + Diuron (250g/l)	PCL/14145/00605G March 2015	Herbicide for the control of grasses and broadleaf weeds in cotton, citrus, sugarcane, oil palm and rubber
22.	Comot 41SL	III	Altimate Agrochemicals Co. Ltd, Accra.	Altimate Agrochemicals Co. Ltd, Accra.	Glyphosate (410g/l)	PCL/15121/00682G August 2015	Herbicide for the control of annual, perennial grasses and broadleaf weeds
23.	Cynaking SC	II	Rainbow AgroSciences Co. Ltd., Accra	Rainbow AgroSciences Co. Ltd., Accra	Cynazine (500g/l)	PCL/1599/00670G August 2015	Herbicide for the control of weeds in maize and peas
24.	Cynaplus SC	II	Rainbow AgroSciences Co. Ltd., Accra	Rainbow AgroSciences Co. Ltd., Accra	Atrazine (250g/l) + Cynazine (250g/l)	PCL/1599/00669G August 2015	Herbicide for the control of broadleaf weeds in maize
25.	DoubleForce	II	Jubaili Agrotec Ltd, Kumasi.	Jubaili Agrotec Ltd, Kumasi.	Diuron (350g/l) + Paraquat dichoride (150g/l)	PCL/14145/00606R March 2015	Herbicide for the control of grasses and broadleaf weeds
26.	Ehye Praso	III	Beautiful Agrochemical, Kumasi	Beautiful Agrochemical, Kumasi	Glyphosate (41%)	PCL/15171/00650G March 2015	Herbicide for the control of grasses and broadleaf weeds in cereals, vegetables and sugarcane
27.	Firesate	III	Perverse Agro Enterprise, Kumasi	Perverse Agro Enterprise, Kumasi	(Glyphosate Isopropylamine salt)	PCL/15182/00725G	Herbicide for control of grasses and broadleaf weeds in cereals and tree

					(w/v) 480 g/l)	December 2015	crops
28.	Flysate	III	Jubaili Agrotec Limited, Kumasi	Jubaili Agrotec Limited, Kumasi	Glyphosate (41%)	PCL/15145/00704G September 2015	Herbicide for the control of weeds
29.	Force up SL	III	Jubaili Agrotec Ltd, Accra	Jubaili Agrotec Ltd, Accra	Glyphosate (410g/l)	PCL/15145/00659G August 2015	Herbicide for the control of grasses and broadleaf weeds
30.	Force Uron 50SC	III	Jubaili Agrotec Ltd, Accra	Jubaili Agrotec Ltd, Accra	Diuron (50%)	PCL/14145/00603G March 2015	Herbicide for the control of grasses in fruits and cotton
31.	Forpine 80WP	III	Rainbow AgroSciences Co. Ltd., Accra	Rainbow AgroSciences Co. Ltd., Accra	Bromacil (80%)	PCL/1599/00668G August 2015	Herbicide for the control of weeds in pineapples and citrus
32.	Frankosulfuron	III	Frankatson Limited, Accra.	Frankatson Limited, Accra.	Nicosulfuron (40g/l)	PCL/1439/00634G March 2015	Herbicide for the control of grasses in Maize
33.	Glycel 41SL	III	Reiss and Co. Ghana Ltd.,	Reiss and Co. Ghana Ltd.,	Glyphosate (410g/l)	PCL/1410/00632G March 2015	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
34.	Glypa SL	III	Wynca Sunshine Agric. Products & Trading Co. Ltd., Accra.	Wynca Sunshine Agric. Products & Trading Co. Ltd., Accra.	Glyphosate (30%) + MCPA (6%)	PCL/1557/00693G August 2015	Herbicide for the control of broadleaf weeds and grasses
35.	Gramokal SL	II	B. Kaakyire Agrochemical Co., Ltd., Kumasi	B. Kaakyire Agrochemical Co., Ltd., Kumasi	Paraquat dichloride (200g/l)	PCL/1581/00652R June 2015	Herbicide for the control of broadleaf weeds and grasses

36.	Gramopat Super SL	II	Pakutin Enterprise, Kumasi	Pakutin Enterprise, Kumasi	Paraquat dichloride (42%)	PCL/15166/00641R March 2015	Herbicide for the control of weeds
37.	Gramoperp	II	Perp Oma Agrochemical, Kumasi.	Perp Oma Agrochemical, Kumasi.	Paraquat (200g/l)	PCL/15160/00685R August 2015	Herbicide for the control of grasses and broadleaf weeds in cereals and tree crops
38.	Gramotouch Super SL	II	S.O. Ansah Enterprise, Kumasi	S.O. Ansah Enterprise, Kumasi	Paraquat (200g/l)	PCL/15144/00649R March 2015	Herbicide for the control of grasses and broadleaf weeds
39.	Heat 70WG	III	Cama Agro Consulting Ltd., Accra	Cama Agro Consulting Ltd., Accra	Saflufenacil (700g/kg)	PCL/1498/00610 March 2015	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
40.	Herbaxine 50SC	II	Joyful Agro Services, Kumasi	Joyful Agro Services, Kumasi	Atrazine (500g/l)	PCL/1486/00612G March 2015	Herbicide for the control of grasses in maize, sorghum and pineapples
41.	Herbtryn SC	II	Rainbow AgroSciences Co. Ltd., Accra	Rainbow AgroSciences Co. Ltd., Accra	Ametryn (500g/l)	PCL/1599/00672G August 2015	Herbicide for the control of grasses and broadleaf weeds in banana, pineapple, plantain and sugarcane
42.	Kondem 41SL	III	K. Badu Agro Chemicals Kumasi	K. Badu Agro Chemicals Kumasi	Glyphosate (410g/l)	PCL/1535/00722/G December 2015	Herbicide for the control of broadleaf weeds and grasses
43.	Kobisate 41SL	III	Koobis & Zink Agro	Koobis & Zink Agro	Glyphosate (41%)	PCL/1595/00663G	Herbicide for the control

			Chemicals Ltd. Kumsai	Chemicals Ltd. Kumsai		October 2015	of broadleaf weeds and grasses
44.	Kudilex Action	III	Kudilex Enterprise, Suhum.	Kudilex Enterprise, Suhum.	Glyphosate (480g/l)	PCL/14162/00608G March 2015	Herbicide for the control of grasses and broadleaf weeds in cereals and fruits
45.	Kumaquat Super Action	II	Kudilex Enterprise, Suhum.	Kudilex Enterprise, Suhum.	Paraquat (200g/l)	PCL/14162/00607R March 2015	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
46.	Laudis 630SC	III	Bayer Crop Science, Dzorwulu, Accra.	Bayer Crop Science, Dzorwulu, Accra.	Tembotrione (420g/l) + Isoxadifen-ethyl (210g/l)	PCL/15137/00661G June 2015	Herbicide for the control of grasses and broadleaf weeds in maize
47.	Megazine 3030	II	Dorakt Company Ltd., Kumasi.	Dorakt Company Ltd., Kumasi.	Atrazine (250g/l) + Cyanazine (250g/l)	PCL/1569/00699G August 2015	Herbicide for the control of broadleaf weeds and grasses in maize
48.	Mestrong SC	III	Rainbow AgroSciences Co. Ltd., Accra	Rainbow AgroSciences Co. Ltd., Accra	Mesotrione (480g/l)	PCL/1599/00667G August 2015	Selective herbicide for the control of weeds in maize and sorghum
49.	Nicofos 4OD	III	Natosh Company. Limited, Kumasi.	Natosh Company. Limited, Kumasi.	Nicosulfuron (4%)	PCL/1430/00633G March 2015	Herbicide for the control of weeds in maize
50.	Nico Pila	III	PakGhana Company Ltd, Kumasi.	PakGhana Company Ltd, Kumasi.	Nicosulfuron (40g/l)	PCL/15165/00680G August 2015	Herbicide for the control of grasses and broadleaf weeds
51.	Nwura Suro	III	Cocoa Inputs Co., Ltd, Accra	Cocoa Inputs Co., Ltd, Accra	Glyphosate (41%)	PCL/1589/00676G August 2015	Herbicide for the control of weeds

52.	Paraeforce 20SL	II	Jubaili Agrotec Ltd, Accra	Jubaili Agrotec Ltd, Accra	Paraquat dichloride (200g/l)	PCL/15145/00660R August 2015	Herbicide for the control of grasses and broadleaf weeds in rice and vegetables
53.	Paraq SL	III	The Candel Company Ltd., Accra	The Candel Company Ltd., Accra	Paraquat Dichloride (24%)	PCL/1426/00631R March 2015	Herbicide for control of broadleaf weeds and grasses
54.	Rondo 48SL	III	Reiss and Co. Ghana Limited, Accra	Reiss and Co. Ghana Limited, Accra	Glyphosate (480g/l)	PCL/1410/00609G March 2015	Herbicide for the control of weeds
55.	Rondo 75.7SG	III	Reiss and Co. Ghana Limited, Accra	Reiss and Co. Ghana Limited, Accra	Glyphosate (757g/kg)	PCL/1410/00627G March 2015	Herbicide for the control of weeds
56.	Sorogosate 48SC	III	Sorogo Limited, Nima, Accra.	Sorogo Limited, Nima, Accra.	Glyphosate (480g/l)	PCL/15172/00679G August 2015	Herbicide for the control of grasses and broadleaf weeds
57.	Sunago-Go 33EC	III	Wynca Sunshine Agric Prdt & Trad. Co. Ltd, Accra.	Wynca Sunshine Agric Prdt & Trad. Co. Ltd, Accra.	Pendimethalin (33%)	PCL/1457/00597G March 2015	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
58.	Sunbuzin 700WP	III	Wynca Sunshine Agric Prdt & Trad. Co. Ltd, Accra.	Wynca Sunshine Agric Prdt & Trad. Co. Ltd, Accra.	Metribuzin (700g/l)	PCL/1457/00598G March 2015	Herbicide for the control of broadleaf weeds in soybean
59.	Sunfuron 40OD	III	Wynca Sunshine Agric Prdts & Trading Co. Ltd, Accra	Wynca Sunshine Agric Prdts & Trading Co. Ltd, Accra	Nicosulfuron (40g/l)	PCL/1457/00565G March 2015	Herbicide for the control of grasses and broadleaf weeds in maize
60.	Sunphocate 360SL	III	Wynca Sunshine Agric Prdt & Trad. Co. Ltd,	Wynca Sunshine Agric Prdt & Trad. Co. Ltd,	Glyphosate (360g/l)	PCL/1457/00594G	Herbicide for the control of grasses and broadleaf

			Accra.	Accra.		March 2015	weeds
61.	Sun-Anico OF	III	Wynca Sunshine Agric. Products & Trading Co. Ltd., Accra.	Wynca Sunshine Agric. Products & Trading Co. Ltd., Accra.	Atrazine (20%) + Nicosulfuron (3%)	PCL/1557/00691G August 2015	Herbicide for the control of broadleaf weeds and grasses in maize
62.	Sunphosate Ultra SL	III	Wynca Sunshine Agric. Products & Trading Co. Ltd., Accra.	Wynca Sunshine Agric. Products & Trading Co. Ltd., Accra.	Glufosinate Ammonium (200g/l)	PCL/1557/00692G August 2015	Non-selective systemic herbicide for the control of weeds in rubber and citrus plantations
63.	Sun-oxyfop 108EC	III	Wynca Sunshine Agric Prdt & Trad. Co. Ltd, Accra.	Wynca Sunshine Agric Prdt & Trad. Co. Ltd, Accra.	Haloxypop-P-methyl (108g/l)	PCL/1457/00593G March 2015	Herbicide for the control of post emergence annual and perennial grasses
64.	Sunward WDG	III	Rainbow AgroSciences Co. Ltd., Accra	Rainbow AgroSciences Co. Ltd., Accra	Isoxaflutole (75%)	PCL/1599/00671G June 2015	Herbicide for the control of grasses and broadleaf weeds in maize and sugarcane
65.	Supreme 48 SL	III	Altimate Agrochemicals Co. Ltd, Accra.	Altimate Agrochemicals Co. Ltd, Accra.	Glyphosate (480g/l)	PCL/15121/00684G August 2015	Herbicide for the control of grasses and broadleaf weeds
66.	Tropica EC	III	Rainbow AgroSciences Co. Ltd., Accra	Rainbow AgroSciences Co. Ltd., Accra	Acetochlor (900g/l)	PCL/1599/00673G June 2015	Herbicide for the control of grasses and broadleaf weeds in maize, cotton, groundnut and sugarcane
67.	Wadwumanie	III	Wamwus Agrochemical Ltd., Kumasi.	Wamwus Agrochemical Ltd.,	Glyphosate (41%)	PCL/15175/00697G	Herbicide for the control of weeds

				Kumasi.		August 2015	
68.	Weedcut 20SL	II	Jubaili Agrotec Ltd, Accra	Jubaili Agrotec Ltd, Accra	Paraquat dichloride (200g/l)	PCL/15145/00703R September 2015	Herbicide for the control of grasses and broadleaf weeds in rice and vegetables
69.	Weed Konka 41SL	III	Jem Intercontinental Services, Tema.	Jem Intercontinental Services, Tema.	Glyphosate (410g/l)	PCL/1565/00665G August 2015	Herbicide for the control of grasses and broadleaf weeds

Appendix 3. Research Protocol and interview guide

a. Private sector interviews

Step 1. Market profile (FP)

a. Collect background statistical data

- Tables 1-10 below

1. List and composition of pesticides sold/authorized in Ghana
2. Trends in volume of pesticides used
3. Price trends (herbicides, insecticides, fungicides)
4. Farmer use of pesticides (based on secondary data)
 - herbicides, insecticides, fungicides
 - selective and nonselective herbicides
5. Inventory of registered and unregistered glyphosate products sold in local markets in Ghana
6. Timetable of glyphosate brands registered for sale locally
7. Major producers, importers and distributors
8. Policy chronology: national pesticide regulations
9. Implementing structures, regulatory functions and staffing
10. List of key markets

b. Summarize market structure and participants

- list of key national pesticide markets
- list key suppliers (importers, producers, distributors, local representatives of major suppliers, regional traders)
- list of key regulators
- list of other important stakeholders

Step 2. Identify priority locations and suppliers for interview (FP +team)

Capital city

N = 5 importers

N = all local representatives of major suppliers

N = all bulk buyers

N = all traders operating regionally

N = 2-4 markets

N = 5 wholesalers

N = all producers

N = 10 retailers

N = 1 trade association

Step 3. Conduct interview with key private sector actors (See Interview Guide below)

b. Regulatory system interview

Step 1. Regulatory system overview

- Policy chronology (Table 8)
- copies of key regulations

Step 2. Identify key domestic institutions and key informants in each

- national pesticide committee
- regulatory bodies
- scientific
- donors, outside support groups

Step 3. Select key informants to interview

N = ?

Step 4. Interview key public sector stakeholders

(See Public sector Interview Guide)

c. Market-level glyphosate information for each market visited

- list all glyphosate products on sale
- purchase 1-liter bottle of each brand sold on the market
- for each product, list the following information
 - Manufacturer
 - Distributor
 - Manufacturing location
 - Homologation (Registration) number (if any)
 - Price per liter

d. Private Sector Interview Guide

1. Business profile

- when did you start selling/importing pesticides ?
- what major pesticides do you sell?

Tableau 1

	Non Selective	Selective (specify the crop)
Herbicides		
Insecticides		
Fungicides		

- what category and which specific products do you sell the most of ?

Tableau 2

Category	Most popular products (top 5)	
	Non Selective	Selective
Herbicides		
Insecticides		
Fongicides		

- who are your principal clients?
- what role do you play in the supply chain?
 - Importer, wholesaler, retailer, producer
- do you represent one or more suppliers?
- who is your principal supplier?

- who are your principal competitors?
- how many sellers do you compete with?

2. Market structure and evolution

- have quantities sold in your market increased or decreased since you began selling pesticides?
 - Herbicides
 - Insecticides
 - Fungicides
- have the number of importers increased or decreased over time
- have the number of brands increased or decreased over time
- have the number of sellers increased or decreased over time
- on what basis do you compete with other suppliers and brands?
 - Quality? Price? Volume? Service? Credit terms? Packaging?, Advertising?

3. Pesticide policy

- can anyone sell pesticides? what is required?
- have you proposed any specific products for homologation (registration)?
- how long does the homologation (registration) process take?
- what import procedures are required?
- what role do generic herbicides, insecticide play in local markets?
- have you experienced any problem with counterfeiting of herbicides, insecticides?
 - Adulteration? Have you found adulterated pesticides being sold? What did you do about it?
- Which generics or counterfeit products compete directly with your principal products?
- Have your costumers ever complained about your products?
- Enforcement capacity?
- How well are pesticides regulated?
- Do you see any major problems in the pesticide market?
- Any recommendations on ways to improve functioning of local pesticide market?

Table 3 For Importers/retailers

Market summary	Major competitor product	Key concerns
Glyphosate		
Other herbicides		
Insecticides		
Fungicides		

e. Policy Makers and Regulators Interview guide

1. Regulatory overview

- list of legally allowed pesticides
- Licensing requirements for pesticides sellers
- national regulators
 - pre-homologation
 - homologation
 - post-homologation

2. National regulations in practice

- import procedures and requirements for pesticides?
- pre-homologation authorization for testing ?
- homologation decisions
- post-registration decisions
- post-registration monitoring
 - any studies of environmental impact?
 - of impact on human health?
 - Of product quality?
 - Of unregistered pesticides being sold?
- regulatory enforcement ?
- what actions have been taken in past year to control adulterated, outdated or non-homologated pesticides ?
- enforcement capacity : responsible agency; # agents
- testing capacity: labs, names, staffing, capabilities

3. What key regional policy decisions affect pesticide sales here?

- awareness of regional pesticide policies affecting national regulators
- local recognition of regional homologation and testing?
- implementation status of key regional policy decisions
 - implementing laws and regulations
 - CNGP established?
 - CNGP functioning? What regularity? effectiveness

4. Market observations

- quantity trends
- role of generics
- counterfeiting?
- adulteration?
- quality of products sold
- share of unregistered products
 - Herbicides
 - Insecticides

5. Problems and opportunities

- What major opportunities do you see in the pesticide market?
- Do you see any obvious problems in the pesticide market?
- Any recommendations on ways to improve functioning of local pesticide market?

Appendix 4. Trends in the quantity of pesticides imported in the country (tonnes) from 2004-2015

Pesticide Category	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Insecticide	610	5,982	6,921	9,979	8,391	9,478	11,803	837,610	547,210	7,679	14,161	21,741
Fungicide	770	1,713	2,148	2,575	6,037	2,198	5,653	648,000	366,000	5,236	1,648	1,548
Herbicide	1096	5,340	8,780	8,932	11,445	13,535	13,162	884,700	1,005,900	41,593	35,630	316,218

Source: EPA, PPRSD/MOFA, 2015

Appendix 5. Price trends

Appendix 5a. Average Import prices of pesticides into Ghana ('000 Ghs/litre)

Pesticides category	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Herbicide	7.12	7.12	7.75	8.0	8.10	7.75	8.75	9.20	12.10	12.87
Insecticide	7.37	8.00	8.25	9.75	9.75	10.25	10.62	10.62	15.12	17.62
Fungicide	9.50	12.87	14.37	14.12	15.62	20.12	19.75	21.25	26.25	21.75

Source: trader interviews conducted in August 2016.

Appendix 5b. Average Domestic market prices of pesticides in Ghana (Ghs/litre)

Pesticides category	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Herbicide	15.75	6.50	7.25	8.75	8.00	8.87	9.12	9.50	12.12	21.60
Insecticide	8.12	9.62	10.62	14.28	11.75	12.75	14.50	14.50	16.50	19.12
Fungicide	13.50	18.75	20.50	21.50	21.25	19.50	21.00	21.50	21.87	24.50

Source: Trader interviews conducted in August 2016.

Appendix 6: Inventory of registered and unregistered glyphosate products sold in local markets in 2016

No.	Product Name	WHO Classification	Firm Registering Pesticide	Local Distributor (s)	Active Ingredient (s)	EPA Registration Number	Uses
Registered glyphosate products							
1.	Adom 48SL	III	Jakess Agro Company Ltd, Kumasi	Jakess Agro Company Ltd, Kumasi	Glyphosate (410g/l)	FRE/1467/00791G November 2014	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
2.	Adwuma Wura 480SL	III	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Glyphosate (480g/l)	FRE/1543/00863G August 2015	Herbicide for the control of annual, perennial grasses and broadleaf weeds in cereals and vegetables
3.	Adwuma Wura 5.7 WSG	III	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Glyphosate (75.7%)	FRE/1543/00864G August 2015	Herbicide for the control of annual, perennial grasses and broadleaf weeds in cereals and vegetables
4.	Afuwura 48 SL	III	WAAF Agro Limited, Techiman	WAAF Agro Limited, Techiman	Glyphosate (480g/l)	FRE/15108/00851G June 2015	Herbicide for the control of annual, perennial broadleaf weeds and grasses in cereals and vegetables
5.	Best Up 480SL	III	Vista 2000 Limited, Accra	Vista 2000 Limited, Accra	Glyphosate (480g/l)	FRE/15142/00850G August 2015	Herbicide for the control of annual, perennial broadleaf weeds and grasses in maize, rubber, oil palm, coffee and rice
6.	Bonsate 480 SL	III	Bon Agro Company Limited, Somanya	Bon Agro Company Limited, Somanya	Glyphosate (480g/l)	FRE/15149/00936G December 2015	Herbicide for the control of weeds
7.	Chemosate 360 SL	III	Chemico Limited, Tema	Chemico Limited, Tema	Glyphosate (360g/l)	FRE/1405/00687G March 2015	Herbicide for the control of annual and perennial weeds
8.	ForceUp	III	Jubaili Agrotec Ltd., Kumasi	Jubaili Agrotec Ltd., Kumasi	Glyphosate (41%)	FRE/15145/00829G August 2015	Herbicide for the control of weeds in crops
9.	Frankosate 41 SL	III	Frankatson Limited, Accra	Frankatson Limited, Accra	Glyphosate (410g/l)	FRE/1439/00794G November 2014	Herbicide for the control of broadleaf weeds, sedges and grasses
10.	Glyfos 41 SL	III	Agrimat Limited, Accra	Agrimat Limited, Accra	Glyphosate (410g/l)	FRE/1402/00809G December 2014	Herbicide for the control of annual, perennial grasses and broadleaf weeds
11.	Glycot 41 SL	III	Afcott Ghana Limited, Accra	Afcott Ghana Limited, Accra	Glyphosate (410g/l)	FRE/1458/00789G November 2014	Herbicide for the control of annual, perennial grasses and broadleaf weeds in cereals
12.	Glygold 41 SL	III	L'espoir Company Limited	L'espoir Company Limited Accra	Glyphosate (410g/l)	FRE/1453/00768G	Herbicide for the control of annual and perennial broadleaf weeds and grasses

			Accra			November 2014	
13.	Glyphader 480 SC	III	Louis Dreyfus Commodities, Ghana Ltd, Tema	Louis Dreyfus Commodities, Ghana Ltd, Tema	Glyphosate (480g/l)	FRE/1455/00734G October 2014	Herbicide for the control of broadleaf weeds and grasses
14.	Glyphader 75 SG	III	Louis Dreyfus Commodities Gh. Ltd, Tema	Louis Dreyfus Commodities Gh. Ltd, Tema	Glyphosate 757g/kg)	FRE/1455/00733G October 2014	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
15.	Glyphogan 480 SL	III	Adama West Africa Ltd., Accra	Adama West Africa Ltd., Accra	Glyphosate (360g/l)	FRE/14100/00813G December 2014	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
16.	Glyphosate Technical	III	Wynca Sunshine Agric Products & Trading, Accra	Wynca Sunshine Agric Products & Trading, Accra	Glyphosate Ammonium Salt (88 Min)	FRE/1557/00886G August 2015	Herbicide for the control of broadleaf weeds and grasses in maize
17.	Glyphosate Technical	III	Wynca Sunshine Agric Products & Trading, Accra	Wynca Sunshine Agric Products & Trading, Accra	Glyphosate Ammonium Salt (95 Min)	FRE/1557/00887G August 2015	Herbicide for the control of broadleaf weeds and grasses in maize
18.	Glystar 41 SL	III	Cropstar Enterprise, Kumasi	Cropstar Enterprise, Kumasi	Glyphosate (41%)	FRE/1553/00894G August 2015	Herbicide for the control of broadleaf weeds and grasses
19.	Glywephoasate	III	Blue Anchor Farms and Enterprise, Accra	Blue Anchor Farms and Enterprise, Accra	Glyphosate (360g/l)	FRE/14146/00703G April 2014	Herbicide for the control of grasses and broadleaf weeds
20.	Kabasate 41 SL	III	Badu Kaakyire Agrochemical Co. Ltd., Kumasi	Badu Kaakyire Agrochemical Co. Ltd., Kumasi	Glyphosate (410g/l)	FRE/1581/00883G August 2015	Herbicide for the control of annual, perennial grasses and broadleaf weeds in cereals and vegetables
21.	Kalach Extra 70 SG	III	Calli Ghana Company Limited, Tema	Calli Ghana Company Limited, Tema	Glyphosate 700g/kg)	FRE/1406/00712G October 2014	Herbicide for the control of grasses and broadleaf weeds
22.	Kalach 360 SL	III	Calli Ghana Company Limited, Tema	Calli Ghana Company Limited, Tema	Glyphosate (360g/l)	FRE/1406/00711G October 2014	Herbicide for the control of broadleaf weeds and grasses
23.	Kurasate 360 SL	III	Kurama Company Limited, Accra	Kurama Company Limited, Accra	Glyphosate (360g/l)	FRE/1416/00772G November 2014	Herbicide for the control of grasses and broadleaf weeds
24.	Labada 75 G	III	Louis Dreyfus Commodities Gh., Ltd, Tema	Louis Dreyfus Commodities Gh., Ltd, Tema	Glyphosate 757g/kg)	FRE/1455/00731G October 2014	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
25.	Meshye Nwura 41 SL	III	Sefa & Jane Agro. Kumasi	Sefa & Jane Agro. Kumasi	Glyphosate (410g/l)	FRE/13135/00654G October 2013	Herbicide for the control of grasses and broadleaf weeds

26.	Nnobia 41 SL	III	J. K. Duku Enterprise, Kumasi	J. K. Duku Enterprise, Kumasi	Glyphosate (41%)	FRE/1455/00739G October 2014	Herbicide for the control of grasses and broadleaf weeds
27.	Nwura Wura 360 SL	III	Wynca Sunshine Agric Products & Trading, Accra	Wynca Sunshine Agric Products & Trading, Accra	Glyphosate (360g/l)	FRE/1457/00749G November 2014	Herbicide for the control of grasses and broadleaf weeds
28.	Oyeadieyie 41 SL	III	Frankatson Limited, Accra	Frankatson Limited, Accra	Glyphosate (410g/l)	FRE/1439/00795G November 2014	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
29.	Power 41 SL	III	J. K. Duku Enterprise, Kumasi	J. K. Duku Enterprise, Kumasi	Glyphosate (41% w/w)	FRE/1498/00740G October 2014	Herbicide for the control of grasses and broadleaf weeds
30.	Rival 360 SL	III	Wienco (Gh.) Ltd, Accra	Wienco (Gh.) Ltd, Accra	Glyphosate (360 g/l)	FRE/1401/00820G December 2014	Herbicide for the control of annual and perennial grasses and broadleaf weeds
31.	Roundup 360 SL	III	Louis Dreyfus Commodities, Ghana Ltd, Tema	Louis Dreyfus Commodities, Ghana Ltd, Tema	Glyphosate (360g/l)	FRE/1455/00732G October 2014	Herbicide for the control of annual and perennial broadleaf weeds and grasses
32.	Roundup 450 Turbo	III	Louis Dreyfus Commodities, Ghana Ltd, Tema	Louis Dreyfus Commodities, Ghana Ltd, Tema	Glyphosate (450g/l)	FRE/1455/00822G December 2014	Herbicide for the control of annual grasses and broadleaf weeds
33.	Roundup Biosec 72 SG	III	Louis Dreyfus Commodities, Ghana Ltd, Tema	Louis Dreyfus Commodities, Ghana Ltd, Tema	Glyphosate 720g/kg)	FRE/1555/00858G August 2015	Herbicide for the control of annual, perennial, grasses, sedges and broadleaf weeds in tree plantations and arable crops
34.	Sharp 480 SL	III	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Glyphosate (480g/l)	FRE/1543/00860G August 2015	Herbicide for the control of annual and perennial grasses and broadleaf weeds in cereals and vegetables
35.	Shye Nwura SL	III	Bentronic Productions Kumasi	Bentronic Productions Kumasi	Glyphosate (41% w/w)	FRE/1425/00253G October 2014	Herbicide for the control of grasses and broadleaf weeds
36.	Sikosto 360 SL	III	Kurama Company Limited, Accra	Kurama Company Limited, Accra	Glyphosate (360g/l)	FRE/1416/00771G November 2014	Non-selective herbicide for the control of annual, perennial grasses and broadleaf weeds
37.	Sunphosate 360 SL	III	Wynca Sunshine Agric Products & Trading Co., Limited, Accra	Wynca Sunshine Agric Products & Trading Co., Limited, Accra	Glyphosate (360g/l)	FRE/1457/00750G November 2014	Herbicide for the control of broadleaf weeds and grasses
38.	Sunphosate 757 WSG	III	Wynca Sunshine Agric Products & Trading Co.,	Wynca Sunshine Agric Products & Trading Co.,	Glyphosate (757g/kg)	FRE/1457/00752G November 2014	Herbicide for the control of broadleaf weeds and grasses

			Limited, Accra	Limited, Accra			
39.	Weedall SL	III	Kumark Company Limited, Kumasi	Kumark Company Limited, Kumasi	Glyphosate (480g/l)	FRE/1543/00862G August 2015	Selective herbicide for the control of annual, perennial grasses and broadleaf weeds in cereals and vegetables
40.	Wynna SL	III	Wynca Sunshine Agric Products & Trading Co. Ltd, Accra	Wynca Sunshine Agric Products & Trading Co. Ltd, Accra	Glyphosate (410g/l)	FRE/1457/00751G November 2014	Non-selective herbicide for the control of annual and perennial broadleaf weeds in cereals and vegetables
41.	Wynna 360 SL	III	Wynca Sunshine Agric Products & Trading, Accra	Wynca Sunshine Agric Products & Trading, Accra	Glyphosate (360g/l)	FRE/1457/00753G November 2014	Herbicide for the control of annual and perennial broadleaf weeds and grasses
42.	Adowura SL	III	Biragosa Enterprise, Kumasi	Biragosa Enterprise, Kumasi	Glyphosate (41%)	PCL/84/00611G March 2015	Herbicide for the control of weeds
43.	Adwumaden Ye	III	Pakutin Enterprise	Pakutin Enterprise	Glyphosate (360g/l)	PCL/15166/00640G March 2015	Herbicide for the control of grasses and broadleaf weeds
44.	Adwumaden 41SL	III	S.O. Ansah Enterprise, Kumasi	S.O. Ansah Enterprise, Kumasi	Glyphosate (410g/l)	PCL/15144/00648G March 2015	Herbicide for the control of grasses and broadleaf weeds
45.	Adwumapapa	III	Darseck Farm & Agrochemical Ent. Ltd.	Darseck Farm & Agrochemical Ent. Ltd.	Glyphosate (480g/l)	PCL/15168/00643G March 2015	Herbicide for the control of grasses and broadleaf weeds
46.	Altisate 41SL	III	Altimate Agrochemical Co. Ltd., Accra	Altimate Agrochemical Co. Ltd., Accra	Glyphosate (410g/l)	PCL/15121/00718G November 2015	Herbicide for control of grasses and broadleaf weeds
47.	Aniphosate 41SL	III	Asantepon Farms, Kade	Asantepon Farms, Kade	Glyphosate (410g/l)	PCL/14122/00614G March 2015	Herbicide for the control of weeds
48.	Bi-Fla 48SL	III	Nadnic Enterprise, Kumasi	Nadnic Enterprise, Kumasi	Glyphosate (480g/l)	PCL/15169/00646G September 2015	Herbicide for the control of annual, perennial grasses and broadleaf weeds in cereals and vegetables
49.	Clear All	III	Facts Agro Inputs, Accra.	Facts Agro Inputs, Accra.	Glyphosate (95%)	PCL/14161/00635G March 2015	Herbicide for the control of annual and perennial weeds
50.	Clearforce	III	Jubaili Agrotec Ltd, Kumasi.	Jubaili Agrotec Ltd, Kumasi.	Glyphosate (250g/l) + Diuron (250g/l)	PCL/14145/00605G March 2015	Herbicide for the control of grasses and broadleaf weeds in cotton, citrus, sugarcane, oil palm and rubber
51.	Comot 41SL	III	Altimate Agrochemicals	Altimate Agrochemicals Co.	Glyphosate (410g/l)	PCL/15121/00682G August 2015	Herbicide for the control of annual, perennial grasses and broadleaf weeds

			Co. Ltd, Accra.	Ltd, Accra.			
52.	Ehye Praso	III	Beautiful Agrochemical, Kumasi	Beautiful Agrochemical, Kumasi	Glyphosate (41%)	PCL/15171/00650G March 2015	Herbicide for the control of grasses and broadleaf weeds in cereals, vegetables and sugarcane
53.	Firesate	III	Perverse Agro Enterprise, Kumasi	Perverse Agro Enterprise, Kumasi	(Glyphosate Isopropylamine salt (w/v) 480 g/l)	PCL/15182/00725G December 2015	Herbicide for control of grasses and broadleaf weeds in cereals and tree crops
54.	Flysate	III	Jubaili Agrotec Limited, Kumasi	Jubaili Agrotec Limited, Kumasi	Glyphosate (41%)	PCL/15145/00704G September 2015	Herbicide for the control of weeds
55.	Force up SL	III	Jubaili Agrotec Ltd, Accra	Jubaili Agrotec Ltd, Accra	Glyphosate (410g/l)	PCL/15145/00659G August 2015	Herbicide for the control of grasses and broadleaf weeds
56.	Glycel 41SL	III	Reiss and Co. Ghana Ltd.,	Reiss and Co. Ghana Ltd.,	Glyphosate (410g/l)	PCL/1410/00632G March 2015	Herbicide for the control of grasses and broadleaf weeds in cereals and vegetables
57.	Glypa SL	III	Wynca Sunshine Agric. Products & Trading Co. Ltd., Accra.	Wynca Sunshine Agric. Products & Trading Co. Ltd., Accra.	Glyphosate (30%) + MCPA (6%)	PCL/1557/00693G August 2015	Herbicide for the control of broadleaf weeds and grasses
58.	Kondem 41 SL	III	K. Badu Agro Chemicals Kumasi	K. Badu Agro Chemicals Kumasi	Glyphosate (410g/l)	PCL/1535/00722/G December 2015	Herbicide for the control of broadleaf weeds and grasses
59.	Kobisate 41SL	III	Koobis & Zink Agro Chemicals Ltd. Kumsai	Koobis & Zink Agro Chemicals Ltd. Kumsai	Glyphosate (41%)	PCL/1595/00663G October 2015	Herbicide for the control of broadleaf weeds and grasses
60.	Kudilex Action	III	Kudilex Enterprise, Suhum.	Kudilex Enterprise, Suhum.	Glyphosate (480g/l)	PCL/14162/00608G March 2015	Herbicide for the control grasses and broadleaf weeds in cereals and fruits
61.	Nwura Suro	III	Cocoa Inputs Co., Ltd, Accra	Cocoa Inputs Co., Ltd, Accra	Glyphosate (41%)	PCL/1589/00676G August 2015	Herbicide for the control of weeds
62.	Rondo 48 SL	III	Reiss and Co. Ghana Limited, Accra	Reiss and Co. Ghana Limited, Accra	Glyphosate (480g/l)	PCL/1410/00609G March 2015	Herbicide for the control of weeds
63.	Rondo 75.7SG	III	Reiss and Co. Ghana Limited, Accra	Reiss and Co. Ghana Limited, Accra	Glyphosate (757g/kg)	PCL/1410/00627G March 2015	Herbicide for the control of weeds
64.	Sorogosate 48SC	III	Sorogo Limited, Nima, Accra.	Sorogo Limited, Nima, Accra.	Glyphosate (480g/l)	PCL/15172/00679G	Herbicide for the control of grasses and broadleaf weeds

						August 2015	
65.	Sunphocate 360 SL	III	Wynca Sunshine Agric Prdt & Trad. Co. Ltd, Accra.	Wynca Sunshine Agric Prdt & Trad. Co. Ltd, Accra.	Glyphosate (360g/l)	PCL/1457/00594G March 2015	Herbicide for the control of grasses and broadleaf weeds
66.	Supreme 48SL	III	Altimate Agrochemicals Co. Ltd, Accra.	Altimate Agrochemicals Co. Ltd, Accra.	Glyphosate (480g/l)	PCL/15121/00684G August 2015	Herbicide for the control of grasses and broadleaf weeds
67.	Wadwumanie	III	Wamwus Agrochemical Ltd., Kumasi.	Wamwus Agrochemical Ltd., Kumasi.	Glyphosate (41%)	PCL/15175/00697G August 2015	Herbicide for the control of weeds
68.	Weed Konka 41SL	III	Jem Intercontinental Services, Tema.	Jem Intercontinental Services, Tema.	Glyphosate (410g/l)	PCL/1565/00665G August 2015	Herbicide for the control of grasses and broadleaf weeds
No.	Product Name		Local Distributor (s)	Location	Manufacturer	Production site	Registration country
Unregistered glyphosate products							
1.	Eserewura 360		Dizengoff	Accra	Shandong Weifang Rainbow chemical c. ltd	China	Ghana
2.	Adwuma ye 400		Cropstar Enterprise	Kumasi	Cropstar chemical industry co ltd Shenzhen	China	Ghana
3.	Weed out		Bentronics production	Kumasi	Agricore chemicals industry co. ltd	China	Ghana
4.	Uproot 360		Saro-agro allied ltd	Kumasi	Ningbo agrostar industry co ltd	China	Ghana
5.	Kum nwura		Bentronics production	Kumasi	Hockley international ltd	China	Ghana
6.	Sarosate 360		Saro agrosience ltd		Forward(BEIHAI) HEPU pesticide co. ltd	China	Ghana
7.	Sharp 480 SL		Kumark company ltd	Kumasi	Trustchem. Co ltd	China	Ghana
8.	Obofo 480		Louis Dreyfus Commodities, Ghana Ltd	Accra	Agsin PTE ltd	Singapore	Ghana
9.	General		Candel company	Accra	The candel FZE	Nigeria	Ghana

		ltd				
10.	Sunkosate	Yawussma ventures	Kumasi	Hangzhou yemin co ltd	China	Ghana
11.	Sinopat	Dasimah company ltd	Kumasi	Hangzhou hexin chemical ltd	China	Ghana
12.	Glyphader 480	Louis Dreyfus Commodities, Ghana Ltd	Accra	Agsin PTE ltd	Singapore	Ghana
13.	Yen wura	Perp oma agrochemicals	Kumasi	Jiangsu Holly corporation	China	Ghana
14.	Weed fast	Chinese woman agro com ltd	Kumasi	W-Young industrial trading co ltd	China	Ghana
15.	Apaafo)	Elvisco farms	Kumasi	Shandong quiochang chemical comp. exp co ltd	China	Ghana
16.	Touch-up	Rock-PBridg company ltd	Accra	Haoyuan industries co. ltd	China	Ghana
17.	Metal 41% SL	Jeneka ltd	Accra	Aandatta limited	United Kingdom	Ghana
18.	Glyking 480 SL	Rainbow agrosiences co ltd	Accra	Shandong weigang rainbow chem co ltd	China	Ghana
19.	Aboboyaa glyphosate	Aboboyaa ent	Kumasi	Hangzhou buy it import & export co ltd	China	Ghana
20.	Adwumamu hene 480	Natosh Ent. Adum	Kumasi	Zhejiang chemicals corp	China	Ghana
21.	Pilasate 41 %	Pakghana comp ltd	Accra	Jiansu fongdong crop science co ltd	China	Ghana
22.	Odeneho 480	B. kaakyire agrochemicals ltd	Kumasi	Nanjing Haige chemical co ltd	China	Ghana
23.	Zoomer 360	Makhteshim Agan west Africa ltd	Kumasi	Agan chemicals manufacturing ltd	Israel	Ghana
24.	Ad)pa wura 480	Joyful agro services	Kumasi	Zhejiang chemical corp	China	Ghana
25.	Rid out 480	Rainbow agrosiences co ltd	Kumasi	Shandong weigang rainbow chem co ltd	China	Ghana

26.	Agyatana 41 %	K Badu agrochemicals	Kumasi	Ningbo suncare unichem ltd	China	Ghana
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