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The Distribution and Importance of Arthropod Pests and Weeds of Agriculture in Myanmar

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Foreword

Ever since its formation in 1984, ACIAR has strongly encouraged the assembling for neighbouring countries of information on the distribution and importance of their major pests of agricultural crops. (Chile: Koch and Waterhouse 2000; China: Li et al. 1997; Pacific: Waterhouse 1997; Southeast Asia: Waterhouse 1993). Such information is also of great value both to these countries as well as to neighbouring countries in determining their own priorities. Furthermore it is of considerable importance to ACIAR (and other aid bodies) in determining the allocation of funding.

When major pests are found to be exotic and the production of dossiers reveal that they have been the targets elsewhere of successful biological control programs, this has led to valuable, sometimes very valuable, (eg Waterhouse et al. 1999) biological control programs supported by ACIAR.

It is confidently anticipated that this publication will lead to information exchange between countries and improved control of agricultural pests in Myanmar.

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အမှာစာ

ဩစတြေးလျနိုင်ငံ အပြည်ပြည်ဆိုင်ရာ စိုက်ပျိုးရေးသုတေသနဌာနသည် ၁၉၈၄ ခုနှစ်၊ စတင်တည်ထောင်ခဲ့ရာမှ အိမ်နီးချင်းနိုင်ငံများ၌ စိုက်ပျိုးရေးသီးနှံ များပေါ်တွင် ကျရောက်သည့် အဓိကဖျက်ပိုးများ၏ အရေးပါမှုနှင့် ပျံ့နှံ့မှုများကိုစာရင်းပြုစုရန် အားပေးခဲ့ပါသည်။ (ဥပမာ။ ။ ချီးလီ ၊ ကိုရီးယားနှင့် ဝါးတားဟောင့်စ် ၂၀၀၀၊ တရုတ် ၊ လီနှင့်အပေါင်းပါများ ၁၉၉၇၊ ပစိဖိတ် ၊ ဝါးတားဟောင့်စ် ၁၉၉၇၊ အရှေ့တောင် အာရှ ၊ ဝါးတားဟောင့်စ် ၁၉၉၃) ။ ဖော်ပြပါ မှတ်တမ်း ပြုစုခြင်းများသည် မိမိနိုင်ငံများအတွက်သာမက အိမ်နီးချင်း နိုင်ငံများအတွက်ပါ လုပ်ငန်း ဦးစား ပေးမှုအတွက် တန်ဖိုးများစွာရှိပါသည်။ ထိုမျှသာမက ဩစတြေးလျနိုင်ငံဆိုင်ရာ အပြည်ပြည် သုတေသနဌာနနှင့် အခြားငွေကြေးပံ့ပိုးမည့်နိုင်ငံများအတွက် ငွေကြေး ခွဲဝေမှုကို အထောက်အကူ ဖြစ်စေပါသည်။

တိုင်းပြည်တစ်ပြည်အတွင်း အဓိကဖျက်ပိုးများဟု သတ်မှတ်ခံရသည့် ဖျက်ပိုးများ သည် ပြည်ပတွင် လည်းကျရောက်သဖြင့် သဘာဝရန်သူပိုးများနှင့် အောင်မြင်စွာ နှိမ်နင်းနိုင်သည့်သာဓကများ၊ စီမံကိန်းများ ရှိနေပါကလည်း ဤအပြည်ပြည်ဆိုင်ရာ သုတေသနဌာနမှ စီမံကိန်းချမှတ်၍ အထောက်အပံ့များ ပေးခဲ့ပါသည်။

ယူဠာဤစာအုပ်ထုတ်ဝေခြင်းဖြင့် မြန်မာနိုင်ငံအတွင်း စိုက်ပျိုးသီးနှံများတွင်ကျရောက်သည့် ဖျက်ပိုးများ အား ကာကွယ်နှိမ်နင်းခြင်း၊ တိုင်းပြည်အချင်းချင်း သတင်းဖလှယ်ခြင်း ဖြင့် ပိုမိုတိုးတက်အောင်မြင် စေမည်ဟု ယုံကြည်မျှော်လင့်ပါသည်။

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Abstract

Information is presented in 19 tables dealing with the importance of 222 arthropod pests and 170 weeds of agriculture in Myanmar. The distribution and importance of the arthropod pests in the 14 agricultural regions of Myanmar is also given.

A simple 4-level rating system was adopted to assess relative importance in 10 crops or groups of crops. This indicated that there were 44 arthropod pests of major importance in most years. The most important of these, in decreasing order, are *Spodoptera litura*, *Helicoverpa armigera*, *Agrotis ipsilon*, *Spilarctia obliqua*, *Thrips palmi*, *Aphis gossypii*, *Odontotermes* spp., *Agrotis segetum*, *Bactrocera cucurbitae*, *Bactrocera dorsalis* and *Scirtothrips dorsalis*.

The most important weeds, in alphabetical order, are *Amaranthus spinosus*, *Cyperus iria*, *Cyperus rotundus*, *Echinochloa colonum*, *Fimbristylis miliacea*, *Imperata cylindrica*, *Leucas cephalotes*, *Mimosa pudica*, *Mitracarpus villosus* and *Trianthema portulacastrum*.

This information is designed to assist in establishing priorities for control projects.

၁။ ကောက်နှုတ်ချက်

မြန်မာ့စိုက်ပျိုးရေးကဏ္ဍတွင် အရေးကြီးအင်းဆက်ဖျက်ပိုးမျိုးစိပ် (၂၂၂) မျိုး နှင့် ပေါင်းမြက် မျိုးစိပ် ၁၇၀ တို့ကို ဇယား (၁) မှ (၁၉) အထိ မှတ်တမ်းတင်ဖော်ပြထားပါသည်။ အင်းဆက် ဖျက်ပိုးတို့၏ အရေးပါမှုနှင့် ပျံ့နှံ့မှုများကို တိုင်း/ပြည်နယ် (၁၄) ခုအလိုက်လည်း အသေးစိတ် ဖော်ပြထားပါသည်။

သီးနှံအုပ်စု (၁၀) မျိုးတို့တွင် လွယ်ကူစွာသတ်မှတ်နိုင်သည့် အမှတ်ပေးအဆင့် (၄) ဆင့်ကို အသုံးပြု၍ ဖျက်ပိုးတို့၏ အရေးပါပုံကိုဆန်းစစ်ထားရာ နှစ်စဉ်အဓိကဖျက်ပိုးမျိုးစိတ် (၄၄) မျိုး ကျရောက်ကြောင်း တွေ့ရှိရပါသည်။ ယင်းတို့အနက်အရေးပါမှုများမှာ၊ နဲရာအလိုက် ဖော်ပြရလျှင် ငမြောင်တောင် (*Spodoptera litura*)၊ သီးလုံးဖောက်ပိုး (*Helicoverpa armigera*)၊ ပိုးနဂါး (*Agrotis ipsilon*) ၊ ရွက်စုံစားခုမွှေးရှည် (*Spilarctia obliqua*) ၊ ခရမ်းသရစ်ပိုး (*Thrips palmi*)၊ ယုပိုး (*Aphis gossypii*) ၊ ခြ (*Odontotermes spp*) ၊ အပင်ဖြတ်ပိုး (*Agrotis segetum*) ၊ ဘူးသခွါးသီးထိုးယင် (*Bactrocera cucurbitae*) ၊ သစ်သီးထိုးယင် (*Bactrocera dorsalis*)၊ နှင့် ငြပ်/ဝါ သရစ်ပိုး (*Scirtothrips dorsalis*) တို့ဖြစ်ကြပါသည်။

အကွရာစဉ်အလိုက် အရေးကြီးပေါက်ရောက်သော ပေါင်းမျိုးစိပ်များသည် ထိကရုံး (*Mimosa pudica*)၊ ပင့်ကူထိပ်ပိတ် (*Leucas cephalotes*)၊ မြက်မုံညင်းအဝါ (*Cyperus iria*)၊ မြက်မုံညင်းဥနက် (*Cyperus rotundus*)၊ မြက်ကွမ်းသီးလေး (*Fimbristylis miliacea*)၊ လိပ်ရင်ဘတ် (*Trianthema portulacastrum*)၊ ဝမ်းဘဲစာမြက် (*Echinochloa colona*)၊ သက်ကယ်မြက် (*Imperata cylindrica*)၊ နှင့် ဟင်းနုနွယ်ဆူးပေါက် (*Amaranthus spinosus*) တို့ဖြစ်ကြပါသည်။

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Introduction

The classical work by Ghosh (1940) *Insect Pests of Burma* has long been out of print, but still provides a very important source of information. A list of field crop pests was published by Crowe (1988) and a more recent overview by Waterhouse (1993). The latter includes an assessment of the relative importance of the major arthropod pests of agriculture in Myanmar and the 9 other countries comprising Southeast Asia. It is here brought up-to-date and greatly extended for Myanmar in order to provide a sound basis for planning and other purposes. The preferred approach to pest control is now unquestionably Integrated Pest Management. This has led to a steadily increasing interest in biological control for pests that are exotic to the region. Indeed, a significant number of its important pests are exotic to Myanmar. This immediately raises the question whether or not they are promising targets for biological control. Some undoubtedly are. Examples include *Chrysomphalus aonidum*, *Nezara viridula*, *Plutella xylostella*, *Chromolaena odorata*, *Lantana camara* and *Pistia stratiotes*. They are promising targets because they have been controlled in this fashion in other countries where they are exotic. Even when the establishment of adequately specific natural enemies does not reduce the target to non-pest status, they can often make a major contribution to an effective IPM system. Dossiers, and other relevant information, are available on these and other potential target pests (Waterhouse 1993b, 1994, 1998, Waterhouse and Norris 1987, 1989, Waterhouse and Sands 2000). For the first time information is assembled separately on the arthropod pests in the 14 agricultural regions of Myanmar (Fig. 1). These are:

1. Ayw	Ayeyarwadi Division
2. Bago	Bago Division
3. Chin	Chin State
4. Kachin	Kachin State
5. Kayin	Kayin State
6. Kayah	Kayah State
7. Mgw	Magwe Division
8. Mdy	Mandalay Division
9. Mon	Mon State
10. Rkk	Rakhine State
11. Sag	Sagaing Division
12. Shan (N)	Shan State (North)
Shan (S)	Shan State (South)
13. Ygn	Yangon Division
14. Tny	Tanintharyi Division

Compilation of the information follows the general pattern established for the oceanic Pacific (Waterhouse 1997), Southeast Asia (Waterhouse 1993), and especially that for southern China (Li Liying et al. 1977) and Chile (Koch and Waterhouse 2000). The formal, (and the informal) use of earlier drafts of these compilations in the preceding decade has led to a very great increase in classical biological control projects in the Pacific, with a number of successes, and more in prospect.

Experts on the pests in the various crops (listed under contributors on page 7) were asked to supply information on pest distribution and importance on a simple rating

system (Waterhouse 1993):

+++	Very widespread and important
++	widespread and important
+	important locally, or only in some years
P	present, but not an important pest: non-pest species are included here.

A blank indicates that there is no information to indicate whether the species is present on that crop in that region.

Experience has shown that any more complicated system requires more precise information than is generally available. It would also attempt to achieve a degree of accuracy greater than that required for the present purpose. In addition, different experts may not agree on the same rating for some species. In such cases we have generally adopted the highest rating suggested if there is a reasonable basis for doing so.

The exact identity of an insect pest is generally of minor significance for chemical control, since very few insecticides are sufficiently selective for exact identity to influence the outcome. The situation is quite different, however, for classical biological control and often for Integrated Pest Management, where it is highly desirable (a) that it is the pest species that suffers the greatest adverse effect from the introduction of a natural enemy, and (b) that even close relatives and, especially, less closely-related, non-target species are not attacked.

As knowledge of insect taxonomy is progressively refined, generic names have sometimes had to be changed in order to reflect newly-recognised relationships. Also, at times, it is discovered that a species has inadvertently been named more than once. Where this happens, only the earliest name is valid. Confusion thus arises when a particular species is referred to under more than one specific or generic name. If an incorrect name is used it follows that information available in the world literature is not retrieved if it is sought under that name; conversely information filed under the discarded name may not be recognised by those elsewhere now using the modern name.

Instances have been found in the present survey where, in some crops, names still in use are no longer regarded as valid by taxonomists elsewhere. Where we have recognised this, the modern preferred name 'X' has been used and the discarded name 'Y' is listed in Table 15. In this, the reader is referred to the preferred name (X) by 'Y' see 'X' (and 'X' use for 'Y'). If, therefore, a name familiar to you does not appear in the crop tables, its replacement preferred name can probably be determined by reference to Table 15. It should not be assumed, however, that the discarded name is necessarily a synonym of the preferred name, because the discarded name may, for example, be valid but refer to a species occurring somewhere else than on that crop in Myanmar.

It has not been possible to have the identity of each species authenticated by appropriate taxonomists, since this would have involved acquiring specimens and submitting them to experts. Instead, it is only the names that have been checked against recent publications and altered where necessary. Useful lists are Wood (1992), Zhang (1994) and the CABI Arthropod Name Index Database on CD-ROM (1995). Valuable advice has been given by a number of taxonomists associated with the Australian National Insect Collection, CSIRO, Canberra; Hemiptera, Dr M. Carver; Orthoptera, Dr D. Rentz; Thysanoptera, Dr L. A. Mound; Coleoptera, Dr E. C. Zimmerman and T. Weir; Lepidoptera, T. Edwards; Diptera, Dr P. Cranston; and Acari, Dr B. Halliday.

It is inevitable that further name changes will be necessary in the future; and some already made may have escaped our attention.

Where we are aware that generic names have been changed, the name of the original author of the species has been placed in brackets. However, it is probable that some instances of change have been overlooked.

၂။ နိဒါန်း

နှိုင်းယှဉ်စရာမရှိသည့်ဂိုရို ၁၉၄၀(Ghosh 1940) ၏ “ မြန်မာနိုင်ငံအင်းဆက်ဖျက်ပိုး”စာအုပ်သည် နှစ်အတန်ကြာ ထပ်မံ ထုတ်ဝေပုံနှိပ်ခဲ့ခြင်းမရှိခဲ့ပေမဲ့ ယူအချိန်ထိ အရေးကြီးသည့် မှတ်တမ်းအဖြစ်ပုံပိုးထောက်ကူလျက် ရှိပါသည်။ ကရို: ၁၉၈၈ (Crowe 1988) သည် သီးနှံဖျက်ပိုးစာရင်းကို ပြုစုထုတ်ဝေခဲ့ပြီး ပိုမိုခေတ်မှီသည့်ကောက်နှုတ်ချက်ကို ဝါးတားဟော့စ် ၁၉၉၃ (Waterhouse 1993) မှ တင်ပြပြုစုခဲ့ပါသည်။ ဖော်ပြပါပြုစုမှုသည် အရှေ့တောင်အာရှနိုင်ငံ (၉) နိုင်ငံနှင့်တကွ မြန်မာနိုင်ငံစိုက်ပျိုးရေးကဏ္ဍတွင် အရေးကြီးသည့် အဓိကအင်းဆက်ဖျက်ပိုးများကို ဆန်းစစ်ပြုစုထားပါသည်။ ယူဤစာအုပ်ဖြင့်ထပ်မံ၍ ပြောင်းလဲကျရောက် လျက်ရှိသည့် ဖျက်ပိုးအခြေအနေများအပေါ်အခြေခံ၍ လုပ်ငန်းများကို ကြိုတင်စီမံမှုများ ပြုလုပ်နိုင်ရန် ပိုမိုကျယ် ပြန့် စွာပြုစုထားပါသည်။

အင်းဆက်ဖျက်ပိုးများကို ဘက်စုံကာကွယ်ရေးနည်းစနစ်ဖြင့် နှိမ်နင်းခြင်းသည် ကမ္ဘာပေါ်တွင် အနှစ်သက်ဆုံးဖြစ်နေကြောင်း မေးစရာမလိုတော့ပါ။ ထို့ကြောင့် အခြားနယ်မြေမှဝင်ရောက်လာသည့် ဖျက်ပိုးများအတွက် ဇီဝနည်းဖြင့်ကာကွယ်ခြင်းကို သိပ္ပံပညာရှင်များ တဖြည်းဖြည်း တိုးတက် စိတ်ဝင်စား လာကြပါသည်။

မြန်မာနိုင်ငံတွင်လည်း အရေးကြီးဖျက်ပိုးအချို့သည် အခြားနယ်မြေဒေသမှ ဝင်ရောက်၍ ဖျက်ပိုးအဆင့် ရောက်ရှိနေခြင်း ဖြစ်ပါသည်။ သို့ပါ၍ ဖော်ပြပါအရေးကြီးဖျက်ပိုးများကို ဇီဝနည်းဖြင့်အောင်မြင်စွာ နှိမ်နင်းနိုင်ခြင်းရှိ၊ မရှိကို စုံစမ်းလေ့လာရန် လိုအပ်နေပြီ ဖြစ်ပါသည်။ အခြားတိုင်းပြည်များတွင် ပြင်ပမှဝင်ရောက်လာပြီး ဇီဝနည်းဖြင့် အောင်မြင်စွာထိန်းသိမ်းကာကွယ်နိုင်သည့် အင်းဆက်ဖျက်ပိုးများမှာ သစ်သီးပင်များတွင် ကျရောက်သည့် ခရမ်းရောင်အကြေးပိုး(*Chrysomphalus aonidum*)၊ စုပိစားဂျိုပိုးစိမ်း (*Nezara viridula*)၊ ဂေါ်ဖီစိန်ကွက်ဖလံ (*Plutella xylostella*)၊ *Chromolaena odorata*, *Lantana camara* နှင့် *Pistia stratiotes* တို့ဖြစ်ကြပါသည်။

သီးနှံဖျက်ပိုး တစ်ခုအတွက် နယ်မြေတစ်ခုတွင် အတည်တကျနေရာယူထားသည့် သဘာဝရန်သူပိုးမျိုးစိပ်တစ်ခုသည် ယင်းဖျက်ပိုးကို ဖျက်ပိုးမဟုတ်သည့်အဆင့်သို့ မလျော့ချနိုင်သော်လည်း ဘက်စုံဖျက်ပိုးကာကွယ်ရေးစနစ်တစ်ခုအတွက် အဓိက အထောက်အကူပြုနိုင်မည်ဖြစ်ပါသည်။ ဇီဝနည်းဖြင့် ထိန်းသိမ်းကာကွယ်နိုင်ရန် အလားအလာရှိသည့် ဖျက်ပိုးများအကြောင်း ဆက်နွယ်သည့်မှတ်တမ်းများ ရရှိနေပြီဖြစ်ပါသည်။(Water house 1993 b, 1994,1998, Waterhouse and Sands 2000)။ ထို့ကြောင့် မြန်မာနိုင်ငံတွင်လည်း သီးနှံအလိုက် အင်းဆက်ဖျက်ပိုးများ၏ အရေးပါပုံအဆင့်များ သတ်မှတ် ပြုစုလျက်၊ အခြားတိုင်းပြည်များနှင့် တွေ့ရှိချက်များ နှိုင်းယှဉ်ကာ ရေရှည်တည်တံ့ခိုင်မြဲမည့် ကာကွယ်ရေးနည်း စနစ်များကိုတည်ထောင်ဖော်ထုတ် နိုင်မည်ဖြစ်ပါသည်။ ထို့အပြင် မြန်မာပြည်၏ တိုင်း/ပြည်နယ် (၁၄)ခု၊ (ပုံ-၁) တွင်ပျံ့နှံ့ကျရောက်

လျက်ရှိသည့် အင်းဆက်ဖျက်ပိုးများ၏ စာရင်းကို ပထမဦးဆုံး ဤစာအုပ်တွင်ပြုစု၍ သီးခြား ဖော်ပြထားပါသည်။

တိုင်း/ပြည်နယ် (၁၄) ခုကို အောက်ပါအတိုင်းအတိုကောက် ခွဲခြားသတ်မှတ်ထားပါသည်။

၁။ Ayw	=	ဧရာဝတီတိုင်း
၂။ Bago	=	ပဲခူးတိုင်း
၃။ Chin	=	ချင်းပြည်နယ်
၄။ Kachin	=	ကချင်ပြည်နယ်
၅။ Kayin	=	ကရင်ပြည်နယ်
၆။ Kayah	=	ကယားပြည်နယ်
၇။ Mgw	=	မကွေးတိုင်း
၈။ Mdy	=	မန္တလေးတိုင်း
၉။ Mon	=	မွန်ပြည်နယ်
၁၀။ Rkk	=	ရခိုင်ပြည်နယ်
၁၁။ Sag	=	စစ်ကိုင်းတိုင်း
၁၂။ Shan (N)	=	ရှမ်းပြည်နယ် (မြောက်ပိုင်း)
Shan (S)	=	ရှမ်းပြည်နယ် (တောင်ပိုင်း)
၁၃။ Ygn	=	ရန်ကုန်တိုင်း
၁၄။ Tny	=	တနင်္သာရီတိုင်း

အထက်ဖော်ပြပါမှတ်တမ်းများပြုစုသည့်ပုံစံသည် ပစိဖိတ်သမုဒ္ဒရာဒေသ (Waterhouse 1997)၊ အရှေ့တောင်အာရှဒေသ (Waterhouse 1993) နှင့် အထူးသဖြင့် တရုတ်တောင်ပိုင်းဒေသ (Li Liying et al 1997) နှင့် ချီလီဒေသ (Koch and Waterhouse 2000) အတိုင်းပြုစုထားပါသည်။ ပြည်ပမှ မှတ်တမ်းများ ပြုစုခဲ့ခြင်းကြောင့် ဖြစ်ပေါ်လာသည့် အကျိုးဆက်များမှာ ပစိဖိတ်ဒေသတွင် ဇီဝပိုးမွှားကာကွယ်ရေးစီမံကိန်းများ အကောင်အထည်များဖော်နိုင်၍ ဖျက်ပိုးကာကွယ်ရေးလုပ်ငန်း အောင်မြင်မှုများရှိခြင်းနှင့် အောင်မြင်မှု အလား အလာများ ထပ်မံရှိလာနိုင်ခြင်းတို့ ဖြစ်ပါသည်။

တိုင်း/ပြည်နယ်များမှ ပါဝင်ပံ့ပိုးကူညီသူများသည် သီးနှံအလိုက်ဖျက်ပိုးကျရောက်မှုနှင့် ပျံ့နှံ့မှုကို အောက်ပါ လွယ်ကူသော အမှတ်ပေးစနစ်ဖြင့် မှတ်တမ်းပြုစုခဲ့ပါသည်။

- + + + - အလွန်ကျယ်ပြန့်ပြန့် ပျံ့နှံ့ကျရောက်၊ အရေးပါဖျက်ပိုး
- + + - ကျယ်ပြန့်စွာ ပျံ့နှံ့ကျရောက်၊ အရေးပါဖျက်ပိုး
- + - ဒေသအလိုက် အရေးပါဖျက်ပိုး၊ တခါတရံ အချို့နှစ်များတွင်သာ အရေးပါ။

P - ကျရောက်သော်လည်း အရေးပါဖျက်ပိုးမဟုတ်။ ကွက်လပ်ဖြစ်နေပါက ဖော်ပြပါဒေသအတွက် ဖျက်ပိုးမျိုးစိပ် ကျ/မကျ မှတ်တမ်းမရှိပါဟုဖော်ညွှန်းပါသည်။

အတွေ့အကြုံများအရ အထက်ဖော်ပြပါအမှတ်ပေးစနစ်ထက် ခက်ခဲသောစနစ်ကိုအသုံးပြုပါက ပိုမိုတိကျသော သတင်းမှတ်တမ်းများကို လိုအပ်မည်ဖြစ်ပါသည်။ ရည်ရွယ်ထားသည်ထက် ပိုမိုတိကျမှုများကိုလည်း ဖော်ထုတ်ရမည့်အပြင် ပညာရှင်များသည် မျိုးစိပ်တစ်ခုအတွက် အမှတ်ပေးမှုအဆင့်လည်းကွာခြားနေမည် ဖြစ်ပါသည်။ ဤအခြေအနေများဖြစ်ပေါ်ခဲ့လျှင် ယေဘုယျအားဖြင့် ပေးသင့်သည့် အမြင့်ဆုံးအမှတ်အဆင့်ကို သတ်မှတ်ထားရမည်ဖြစ်ပါသည်။

ခါတုပေဒနည်းဖြင့် ပိုးမွှားကာကွယ်ရေးအတွက် အင်းဆက်မျိုးစိပ် အတိအကျသိရန်မလိုပါ။ အဘယ်ကြောင့်ဆိုသော် မျိုးစိပ်တစ်ခုတည်းကို သီးခြားနှိမ်နင်းနိုင်သည့် ပိုးသတ်ဆေးများရှားပါးမှုကြောင့် ဖြစ်ပါသည်။ သို့သော်ဇီဝနည်းနှင့် ဘက်စုံပိုးမွှားကာကွယ်ရေးနည်းလမ်းများတွင်မူ သဘာဝရန်သူပိုးများ တင်သွင်းလွှတ်ပေးခြင်းဖြင့် နှိမ်နင်းလိုသည့်ဖျက်ပိုးမျိုးစိပ်များ အကျိုးဆုတ်ယုတ်မှုအများဆုံးဖြစ်စေရန် လိုအပ်ခြင်းနှင့် အခြားပစ်မှတ်မဟုတ်သည့် ဖျက်ပိုးများမထိခိုက်စေခြင်းအတွက် နှိမ်နင်းလိုသည့် အင်းဆက်မျိုးစိပ်ကို သိရှိခွဲခြားနိုင်ရန် အထူးလိုအပ်ပါသည်။

အင်းဆက်မျိုးစိပ်များကို ခွဲခြားသည့်အတတ်ပညာများ တိုးတက်မြင့်မားလာသည်နှင့်အမျှ အသစ်ပေါ်လွင်လာသည့် ဆက်စပ်မှုများကို ဖော်ညွှန်းရန် အင်းဆက်မျိုးစုအမည်များကို ပြောင်းလဲရန် လိုအပ်လာပါသည်။ တခါတရံလည်း အင်းဆက်မျိုးစိပ် တစ်စိပ်ကို တစ်ကြိမ်မက အမည်ကင်ပွန်းတပ်ခဲ့သည်ကို လေ့လာတွေ့ရှိရပါသည်။ ဤကဲ့သို့ အမည်ပေးမှုများဖြစ်ပေါ်ပါက ဦးဆုံးပေးထားသည့် အမည်သာလျှင် တရားဝင်ပါသည်။ မျိုးစိပ်တစ်စိပ်ကို အမည်နှစ်မျိုးဖြင့်ဖော်ညွှန်းပါက ရှုပ်ထွေးမှုများ ပေါ်ပေါက်လာပါသည်။ မျိုးစိပ်၏ အကြောင်းအရာကို မှားယွင်းသောအမည်ဖြင့် ကမ္ဘာ့စာပေလောကတွင် ရှာဖွေတွေ့ရှိမည် မဟုတ်ပါ။ ထို့အပြင် အမည်ဟောင်းဖြင့်မှတ်တမ်းတင်ထားသည့် အကြောင်းအရာများကို အမည်သစ်သုံးသူများမှ ရှာဖွေတွေ့ရှိမည် မဟုတ်ပါ။

ဤစာအုပ်ကိုပြုစုရေးသားရာတွင် အချို့သီးနှံတွင်ကျရောက်သော ဖျက်ပိုးအမည်များကို အခြားပြည်ပမှ ပညာရှင်များ အသုံးမပြုတော့သည်ကိုတွေ့ရှိရပါသည်။ ဤအချက်ကိုပြုပြင်ရန် အများမှအသုံး ပြုနေသော ဖျက်ပိုးအမည် 'X' ကို အသုံးပြုထား၍၊ အပြောင်းခံထားသည့်အမည်ဟောင်း 'Y' ကို ဇယား(၁၅) တွင် စာရင်း ပြုစုထားပါသည်။ ဤစာရင်းတွင် အမည်ဟောင်း 'Y' အစား 'X' ကို သုံးပါဟုညွှန်းထားပါသည်။ ထို့ကြောင့် မိမိနှင့်ယဉ်ပါးမှုမရှိသော သီးနှံဖျက်ပိုးအမည်များကို ဇယားများတွင် မတွေ့ရှိပါက ဇယား (၁၅) တွင် ရှာဖွေနိုင်ပါသည်။ သို့သော် အသုံးမပြုတော့သည့်အမည်သည် ဆင်တူအမည်မဟုတ်ကြောင်း သတိမူရပါမည်။ အဘယ်ကြောင့်ဆိုသော် မြန်မာနိုင်ငံတွင် တရားဝင်အမည်ဟောင်းဖြင့် အခြားသီးနှံပေါ်တွင်ကျရောက်လျက် ရှိနိုင်ခြင်းကြောင့် ဖြစ်ပါသည်။

ဤစာအုပ်တွင် သီးနှံအလိုက်ကျရောက်သည့် ဖျက်ပိုးများကို ပညာရှင်များမှ တစ်ကောင်ချင်း ခွဲခြားသတ်မှတ် နိုင်ခြင်း မရှိခဲ့ပါ။ ယခင် ပုံနှိပ်ထုတ်ဝေမှု မှတ်တမ်းများအပေါ် အခြေခံခွဲခြား၍ လိုအပ်သည့် နေရာများတွင် ပြုပြင်မှုများ ဆောင်ရွက်ခဲ့ပါသည်။ အသုံးပြုခဲ့သည့် မှတ်တမ်းများမှာ - Woods (1992), Zhang (1994) and CABI Arthropod Name Index Database on CD- Rom (1995) တို့ဖြစ်ပါသည်။ တန်ဖိုးမဖြတ်နိုင်သည့် အကြံဉာဏ်များကို Canberra , CSIRO မှ အင်းဆက်စုဆောင်းရေးပညာရှင်များ၊ Hemiptera : Dr M Carver, Orthoptera : Dr D Rentz , Thysanoptera : Dr L . A . Mound , Coleoptera : Dr E . C . Zimmerman and T . Weir , Lepidoptera : T . Edwards , Diptera : Dr . P. Cranston and Acari : Dr . B . Halliday မှ အထောက်အကူ ပြုခဲ့ ပါသည်။

မလွဲမသွေ ရှေ့လာမည့်အနာဂါတ်တွင် အမည်များထပ်မံပြောင်းလဲလာမည်ဖြစ်၍ အချို့အမည် ပြောင်းလဲပြီးသည်များကိုလည်း ကျွန်ုပ်တို့ မသိလိုက်သည်လည်းရှိကောင်း ရှိပါလိမ့်မည်။ အမည်ပြောင်း မျိုးစု များကို သိရှိရသည့်အခြေအနေမျိုးတွင် မူရင်းအမည်ပေးထားသည့် ပုဂ္ဂိုလ်၏အမည်ကို ကွင်းစကွင်းပိတ်ဖြင့် ဖော်ပြ ထားပါသည်။ သို့သော်လည်း ပြောင်းလဲမှုတချို့ ကျန်ကောင်းကျန်ပါလိမ့်မည်။



Figure 1. States and Divisions of Myanmar

Table 1. Arthropod pests of agricultural crops

Pest	Order	Family	Principal crops attacked	See tables
<i>Abidama producta</i> (Walker)	Hemiptera	Cercopidae	sugarcane	5
<i>Acanthoscelides obtectus</i> (Say)	Coleoptera	Bruchidae	pea, bean	3
<i>Achaea janata</i> (Linnaeus)	Lepidoptera	Noctuidae	castor	4
<i>Acherontia styx</i> (Westwood)	Lepidoptera	Sphingidae	sesame, egg plant	4,9
<i>Acheta</i> sp.	Orthoptera	Gryllidae	chickpea, pigeonpea, pea, soybean.	3
<i>Adoretus birmanus</i> Arrow	Coleoptera	Scarabaeidae	groundnut, maize, sorghum.	7
<i>Agrius citri</i> Thery	Coleoptera	Buprestidae	citrus	11
<i>Agrotis ipsilon</i> (Hufnagel)	Lepidoptera	Noctuidae	maize, sorghum, potato, tobacco, chickpea, cotton, bean, green & blackgram, cabbage, pea, cauliflower.	3,6,7,8,9
<i>Agrotis segetum</i> (Denis and Schiffermuller)	Lepidoptera	Noctuidae	maize, sorghum, cabbage, cauliflower, tobacco,	7,8,9
<i>Alcidodes affaber</i> (Aurivillius)	Coleoptera	Curculionidae	mustard, potato. cotton	6
<i>Alcidodes frenatus</i> (Faust)	Coleoptera	Curculionidae	mango	11
<i>Aleurocanthus woglumi</i> Ashby	Hemiptera	Aleyrodidae	citrus	11
<i>Aleurodicus destructor</i> Mackie	Hemiptera	Aleyrodidae	coconut	4
<i>Aleurodicus dispersus</i> Russell	Hemiptera	Aleyrodidae	guava, papaya.	11
<i>Aleurolobus barodensis</i> (Maskell)	Hemiptera	Aleyrodidae	sugarcane	5
<i>Alissonotum impressicole</i> Arrow	Coleoptera	Scarabaeidae	sugarcane	5
<i>Amplipterus panopus</i> (Cramer)	Lepidoptera	Sphingidae	mango, durian.	11
<i>Amrasca devastans</i> (Distant)	Hemiptera	Cicadellidae	cotton	6
<i>Amrasca</i> sp.	Hemiptera	Cicadellidae	maize, egg plant.	7,9
<i>Amritodus atkinsoni</i> (Lethierry)	Hemiptera	Cicadellidae	mango	11
<i>Amsacta albistriga</i> (Walker)	Lepidoptera	Arctiidae	maize, sorghum	7
<i>Amsacta lactinea</i> (Cramer)	Lepidoptera	Arctiidae	groundnut	4
<i>Anomala antiqua</i> (Gyllenhal)	Coleoptera	Scarabaeidae	sugarcane, groundnut, sesame.	4,5
<i>Anomis flava</i> (Fabricius)	Lepidoptera	Noctuidae	cotton	6
<i>Anoplophora versteegii</i> (Ritsema)	Coleoptera	Cerambycidae	citrus	11
<i>Antigastra catalaunalis</i> (Duponchel)	Lepidoptera	Pyralidae	sesame	4
<i>Aonidiella aurantii</i> (Maskell)	Hemiptera	Diaspididae	citrus	11
<i>Aphis craccivora</i> Koch	Hemiptera	Aphididae	groundnut, pigeonpea, soybean, pea.	3,4
<i>Aphis fabae</i> (Scopoli)	Hemiptera	Aphididae	pigeonpea, soybean, green & blackgram, bean.	3
<i>Aphis gossypii</i> Glover	Hemiptera	Aphididae	cotton, guava, papaya, gourd, pumpkin, potato, cucumber, egg plant	6,9,10,11

Table 1. (cont'd) Arthropod pests of agricultural crops

Pest	Order	Family	Principal crops attacked	See tables
<i>Apomecyna histrio</i> (Fabricius)	Coleoptera	Cerambycidae	gourd, pumpkin, cucumber, melon.	10
<i>Apriona germari</i> (Hope)	Coleoptera	Cerambycidae	mulberry, durian	11
<i>Aproaerema modicella</i> (Deventer)	Lepidoptera	Gelechiidae	groundnut, pigeonpea, soybean, bean.	3,4
<i>Archips micaceanus</i> (Walker)	Lepidoptera	Tortricidae	groundnut, soybean, bean.	3,4
<i>Ariadne merione</i> (Cramer)	Lepidoptera	Nymphalidae	castor	4
<i>Aristobia approximata</i> (Thomson)	Coleoptera	Cerambycidae	mango	11
<i>Artona catoxantha</i> (Hampson)	Lepidoptera	Zygaenidae	coconut, oil palm	4
<i>Aspidiotus destructor</i> Signoret	Hemiptera	Diaspididae	coconut, oil palm	4
<i>Aspidomorpha indica</i> Boheman	Coleoptera	Chrysomelidae	sweet potato	9
<i>Athalia lugens</i> (Klug)	Hymenoptera	Tenthredinidae	cabbage, cauliflower, mustard.	8
<i>Atherigona soccata</i> Rondani	Diptera	Muscidae	sorghum	7
<i>Atractomorpha crenulata</i> (Fabricius)	Orthoptera	Pyrgomorphidae	tobacco	9
<i>Attacus atlas</i> (Linnaeus)	Lepidoptera	Saturniidae	mango, avocado, custard apple.	11
<i>Aulacaspis tubercularis</i> Newstead	Hemiptera	Diaspididae	mango	11
<i>Aulacophora foveicollis</i> (Lucas)	Coleoptera	Chrysomelidae	gourd, pumpkin, bitter gourd, cucumber.	10
<i>Aularches miliaris</i> (Linnaeus)	Orthoptera	Pyrgomorphidae	oil palm, banana.	4,11
<i>Bactrocera cucurbitae</i> (Coquillett)	Diptera	Tephritidae	musk melon, gourd, pumpkin, bitter gourd, capsicum, melon, cucumber.	9,10,11
<i>Bactrocera dorsalis</i> (Hendel)	Diptera	Tephritidae	egg plant, tomato, mango, citrus, guava, cashew.	9,11
<i>Bagrada hilaris</i> (Burmeister)	Hemiptera	Pentatomidae	potato, egg plant, cabbage, cauliflower, mustard.	8,9
<i>Batocera rufomaculata</i> (De Geer)	Coleoptera	Cerambycidae	mango, cashew.	11
<i>Bemisia</i> sp.	Hemiptera	Aleyrodidae	mango, guava, papaya.	11
<i>Bemisia tabaci</i> (Gennadius)	Hemiptera	Aleyrodidae	cotton, potato, tobacco, castor.	4,6,9
<i>Brachytrupes</i> sp.	Orthoptera	Gryllidae	oil palm	4
<i>Brevennis rehi</i> (Lindinger)	Hemiptera	Pseudococcidae	rice	2
<i>Brevicoryne brassicae</i> (Linnaeus)	Hemiptera	Aphididae	cabbage, cauliflower	8
<i>Caliothrips indicus</i> (Bagnall)	Thysanoptera	Thripidae	groundnut, legumes.	4
<i>Callitettix versicolor</i> (Fabricius)	Hemiptera	Cercopidae	sugarcane	5
<i>Callosobruchus</i> sp.	Coleoptera	Bruchidae	pea, soybean, bean.	3
<i>Carpomyia vesuviana</i> Costa	Diptera	Tephritidae	jujube	11
<i>Ceratovacuna lanigera</i> (Zehntner)	Hemiptera	Aphididae	sugarcane	5

Table 1. (cont'd) Arthropod pests of agricultural crops

Pest	Order	Family	Principal crops attacked	See tables
<i>Ceroplastes ceriferus</i> (Fabricius)	Hemiptera	Coccidae	mulberry	11
<i>Chilo auricilius</i> (Dudgeon)	Lepidoptera	Pyralidae	sugarcane	5
<i>Chilo infuscatellus</i> Snellen	Lepidoptera	Pyralidae	sugarcane	5
<i>Chilo polychrysus</i> (Meyrick)	Lepidoptera	Pyralidae	rice	2
<i>Chilo</i> spp.	Lepidoptera	Pyralidae	sorghum	7
<i>Chilo suppressalis</i> (Walker)	Lepidoptera	Pyralidae	rice, maize, sugarcane.	2,5,7
<i>Chilo tumidicostalis</i> (Hampson)	Lepidoptera	Pyralidae	sugarcane	5
<i>Chrysomphalus aonidum</i> (Linnaeus)	Hemiptera	Diaspididae	coconut, citrus, guava, papaya.	4,11
<i>Cnaphalocrocis medinalis</i> (Guenee)	Lepidoptera	Pyralidae	rice	2
<i>Condica capensis</i> Guenee	Lepidoptera	Noctuidae	sunflower	4
<i>Coptotermes curvignathus</i> Holmgren	Isoptera	Rhinotermitidae	groundnut, coconut, oil palm.	4
<i>Coridius fuscus</i> (Westwood)	Hemiptera	Dinidoridae	pumpkin	10
<i>Cosmopolites sordidus</i> (Germar)	Coleoptera	Curculionidae	banana	11
<i>Cricula trifenestrata</i> (Helfer)	Lepidoptera	Saturniidae	mango, guava, avocado.	11
<i>Crocidolomia pavonana</i> (Fabricius)	Lepidoptera	Pyralidae	cabbage, cauliflower, mustard.	8
<i>Cylas formicarius</i> (Fabricius)	Coleoptera	Apionidae	sweet potato	9
<i>Cyrtopeltis tenuis</i> (Reuter)	Hemiptera	Miridae	tomato, tobacco.	9
<i>Deporaus marginatus</i> (Pascoe)	Coleoptera	Curculionidae	mango	11
<i>Diaphania indica</i> (Saunders)	Lepidoptera	Pyralidae	pumpkin	10
<i>Diaphania pyloalis</i> (Walker)	Lepidoptera	Pyralidae	citrus	11
<i>Diaphorina citri</i> Kuwayama	Hemiptera	Psyllidae	citrus	11
<i>Dicladispa armigera</i> (Olivier)	Coleoptera	Chrysomelidae	rice	2
<i>Dorylus orientalis</i> Westwood	Hymenoptera	Formicidae	cabbage, cauliflower.	8
<i>Dysdercus cingulatus</i> (Fabricius)	Hemiptera	Pyrrhocoridae	cotton	6
<i>Earias insulana</i> (Boisduval)	Lepidoptera	Noctuidae	cotton	6
<i>Earias vittella</i> (Fabricius)	Lepidoptera	Noctuidae	cotton	6
<i>Elasmolomus sordidus</i> (Fabricius)	Hemiptera	Lygaeidae	sesame	4
<i>Empoasca flavescens</i> (Fabricius)	Hemiptera	Cicadellidae	pigeonpea, egg plant.	3,9
<i>Empoasca</i> sp.	Hemiptera	Cicadellidae	castor, groundnut, sunflower, safflower.	4
<i>Epepeotes uncinatus</i> Gahan	Coleoptera	Cerambycidae	mulberry	11
<i>Epilachna indica</i> Mulsant	Coleoptera	Coccinellidae	gourd, pumpkin, bitter melon, cucumber, melon.	10

Table 1. (cont'd) Arthropod pests of agricultural crops

Pest	Order	Family	Principal crops attacked	See tables
<i>Epilachna 28-punctata</i> Mulsant	Coleoptera	Coccinellidae	gourd, pumpkin, bitter melon, cucumber, melon.	10
<i>Epilachna pusillanima</i> Mulsant	Coleoptera	Coccinellidae	potato	9
<i>Epilachna</i> sp.	Coleoptera	Coccinellidae	pea, soybean.	3
<i>Epilachna vigintioctopunctata</i> (Fabricius)	Coleoptera	Coccinellidae	egg plant, potato.	9
<i>Erionota thrax</i> (Linnaeus)	Lepidoptera	Hesperiidae	banana	11
<i>Etiella zinckenella</i> (Treitschke)	Lepidoptera	Pyralidae	pigeonpea, bean.	3
<i>Eublemma olivacea</i> (Walker)	Lepidoptera	Noctuidae	egg plant	9
<i>Euchrysops cnejus</i> (Fabricius)	Lepidoptera	Lycaenidae	pigeonpea, bean.	3
<i>Eudocima fullonia</i> (Clerck)	Lepidoptera	Noctuidae	citrus, grape.	11
<i>Euproctis fraterna</i> (Moore)	Lepidoptera	Lymantriidae	mango, citrus, guava, cashew.	11
<i>Eurydema pulchrum</i> (Westwood)	Hemiptera	Pentatomidae	cabbage, cauliflower.	8
<i>Euscyrtus concinnus</i> (de Hann)	Orthoptera	Gryllidae	rice	2
<i>Exelastis atomosa</i> (Walsingham)	Lepidoptera	Pterophoridae	pigeonpea, bean.	3
<i>Eysarcoris guttiger</i> (Thunberg)	Hemiptera	Pentatomidae	sesame, mango.	4,11
<i>Ferrisia virgata</i> (Cockerell)	Hemiptera	Pseudococcidae	mango, citrus, papaya, guava, custard apple.	11
<i>Frankliniella</i> sp.	Thysanoptera	Thripidae	maize	7
<i>Gryllotalpa orientalis</i> Burmeister	Orthoptera	Gryllotalpidae	sugarcane	5
<i>Helicoverpa armigera</i> (Hubner)	Lepidoptera	Noctuidae	cotton, chickpea, pigeonpea, pea, bean, potato, tomato, tobacco, groundnut, cabbage, maize, cauliflower, sesame, sunflower.	3,4,6,7,8,9
<i>Helicoverpa assulta</i> (Guenee)	Lepidoptera	Noctuidae	tobacco	9
<i>Hellula undalis</i> (Fabricius)	Lepidoptera	Pyralidae	cabbage, cauliflower, mustard.	8
<i>Heteroderes lenis</i> Candeze	Coleoptera	Elateridae	sugarcane, groundnut.	4,5
<i>Hippotion celerio</i> (Linnaeus)	Lepidoptera	Sphingidae	grape	11
<i>Holotrichia</i> sp.	Coleoptera	Scrabaeidae	groundnut, sugarcane.	4,5
<i>Hypolixus pica</i> (Fabricius)	Coleoptera	Curculionidae	oil seed crops	4
<i>Hypomeces squamosus</i> (Fabricius)	Coleoptera	Curculionidae	sugarcane, tobacco, cotton, rice, maize, mango, citrus, grape.	2,5,6,7,9,11
<i>Idioscopus clypealis</i> (Lethierry)	Hemiptera	Cicadellidae	mango	11
<i>Idioscopus nigroclypeatus</i> (Melichar)	Hemiptera	Cicadellidae	mango	11
<i>Indarbela quadrinotata</i> (Walker)	Lepidoptera	Cossidae	mango, citrus, cashew.	11
<i>Kerria lacca</i> (Kerr)	Hemiptera	Kerriidae	mango, citrus, guava, cashew, apple, tamarind.	11
<i>Kiritshenkella sacchari</i> (Green)	Hemiptera	Pseudococcidae	sugarcane	5

Table 1. (cont'd) Arthropod pests of agricultural crops

Pest	Order	Family	Principal crops attacked	See tables
<i>Lampides boeticus</i> (Linnaeus)	Lepidoptera	Lycaenidae	pigeonpea, pea.	3
<i>Leptocoris acuta</i> (Thunberg)	Hemiptera	Alydidae	rice	2
<i>Leptocoris oratorius</i> (Fabricius)	Hemiptera	Alydidae	rice	2
<i>Leucinodes orbonalis</i> (Guenee)	Lepidoptera	Pyalidae	egg plant	9
<i>Lipaphis erysimi</i> (Kaltenbach)	Hymenoptera	Aphididae	cabbage, cauliflower.	8
<i>Macrotermes</i> spp.	Isoptera	Termitidae	maize, sorghum, sugarcane.	5,7
<i>Marasmia trapezalis</i> (Guenee)	Lepidoptera	Pyalidae	sorghum	7
<i>Maruca vitrata</i> (Fabricius)	Lepidoptera	Pyalidae	pigeonpea	3
<i>Medythia suturalis</i> (Motschulsky)	Coleoptera	Chrysomelidae	pea, green & blackgram, bean.	3
<i>Melanagromyza obtusa</i> (Malloch)	Diptera	Agromyzidae	pigeonpea	3
<i>Melanaphis sacchari</i> (Zehntner)	Hemiptera	Aphididae	sorghum	7
<i>Melanitis ismene</i> (Cramer)	Lepidoptera	Nymphalidae	rice	2
<i>Mylabris pustulata</i> (Thunberg)	Coleoptera	Meloidae	pigeonpea, green & blackgram.	3
<i>Mythimna separata</i> (Walker)	Lepidoptera	Noctuidae	rice, maize, sorghum.	2,7
<i>Mythimna</i> sp.	Lepidoptera	Noctuidae	maize	7
<i>Myzus persicae</i> (Sulzer)	Hemiptera	Aphididae	apple, potato, tomato, tobacco.	9,11
<i>Nephotettix virescens</i> (Distant)	Hemiptera	Cicadellidae	rice	2
<i>Nezara viridula</i> (Linnaeus)	Hemiptera	Pentatomidae	rice, pea, bean, cotton, potato, maize, sorghum, capsicum.	2,3,6,7,9
<i>Nilaparvata lugens</i> (Stal)	Hemiptera	Delphacidae	rice	2
<i>Odoiporus longicollis</i> (Olivier)	Coleoptera	Curculionidae	banana	11
<i>Odontotermes</i> sp.	Isoptera	Termitidae	groundnut, sesame, coconut, oil palm, pea, bean, pigeonpea, chickpea.	3,4
<i>Oecophylla smaragdina</i> (Fabricius)	Hymenoptera	Formicidae	mango, citrus, cashew, tamarind.	11
<i>Omiodes indicata</i> (Fabricius)	Lepidoptera	Pyalidae	green & blackgram	3
<i>Ophiomyia phaseoli</i> (Tryon)	Diptera	Agromyzidae	chickpea, pigeonpea, pea, green & blackgram.	3
<i>Opisina arenosella</i> Walker	Lepidoptera	Xyloryctidae	coconut, oil palm	4
<i>Orgyia turbata</i> Butler	Lepidoptera	Lymantriidae	groundnut	4
<i>Orosius orientalis</i> (Matsumura)	Hemiptera	Cicadellidae	sesame	4
<i>Orseolia andropoginis</i> Felt	Diptera	Cecidomyiidae	sorghum	7
<i>Orseolia oryzae</i> (Wood-Mason)	Diptera	Cecidomyiidae	rice	2
<i>Oryctes rhinoceros</i> (Linnaeus)	Coleoptera	Scarabaeidae	coconut, oil palm.	4

Table 1. (cont'd) Arthropod pests of agricultural crops

Pest	Order	Family	Principal crops attacked	See tables
<i>Ostrinia furnacalis</i> (Guenee)	Lepidoptera	Pyralidae	maize, sorghum.	7
<i>Oxya hyla</i> (Serville)	Orthoptera	Acrididae	rice	2
<i>Papilio demoleus</i> Linnaeus	Lepidoptera	Papilionidae	citrus	11
<i>Paraponyx stagnalis</i> Zeller	Lepidoptera	Pyralidae	rice	2
<i>Parasa lepida</i> (Cramer)	Lepidoptera	Limacodidae	castor	4
<i>Parlatoria ziziphus</i> (Lucas)	Hemiptera	Diaspididae	mango, citrus, apple.	11
<i>Parnara guttatus</i> (Bremer and Grey)	Lepidoptera	Hesperiidae	rice	2
<i>Pectinophora gossypiella</i> (Saunders)	Lepidoptera	Gelechiidae	cotton	6
<i>Pelopidas mathias</i> (Fabricius)	Lepidoptera	Hesperiidae	rice	2
<i>Pentalonia nigronervosa</i> Coquerel	Hemiptera	Aphididae	banana	11
<i>Phodoryctis caerulea</i> Meyrick	Lepidoptera	Gracillariidae	soybean , bean.	3
<i>Phthorimaea operculella</i> (Zeller)	Lepidoptera	Gelechiidae	potato	9
<i>Phycita infusella</i> (Meyrick)	Lepidoptera	Pyralidae	cotton	6
<i>Phyllocnistis citrella</i> Stainton	Lepidoptera	Gracillariidae	citrus	11
<i>Phyllocoptruta oleivora</i> (Ashmead)	Acarina	Tetranychidae	citrus	11
<i>Phyllotreta</i> sp.	Coleoptera	Chrysomelidae	potato	9
<i>Phyllotreta striolata</i> (Fabricius)	Coleoptera	Chrysomelidae	cabbage, cauliflower, mustard.	8
<i>Pieris canidia</i> (Sparrmann)	Lepidoptera	Pieridae	cabbage, cauliflower	8
<i>Pieris rapae</i> (Linnaeus)	Lepidoptera	Pieridae	cabbage, cauliflower	8
<i>Planococcus pacificus</i> (Cox)	Hemiptera	Pseudococcidae	cocoa, custard apple.	11
<i>Plocaederus obesus</i> Gahan	Coleoptera	Cerambycidae	cashew	11
<i>Plocaederus pedestris</i> (White)	Coleoptera	Cerambycidae	mango, cashew.	11
<i>Plutella xylostella</i> (Linnaeus)	Lepidoptera	Plutellidae	cabbage, cauliflower.	8
<i>Pnodoryctis coerulea</i> Meyrick	Lepidoptera	Gracillariidae	soybean, bean.	11
<i>Polyphagotarsonemus latus</i> (Banks)	Acarina	Tetranychidae	pea, green & blackgram, potato, egg plant,	3,9
<i>Potamon dayanum</i> (Wood-Mason)	Crustacea	Potamidae	rice	2
<i>Psalis pennatulata</i> (Fabricius)	Lepidoptera	Lymantriidae	rice	2
<i>Pseudoceropepes piratis</i> (Meyrick)	Lepidoptera	Pyralidae	cashew	11
<i>Pseudococcus</i> sp.	Hemiptera	Pseudococcidae	potato	9
<i>Pseudodendrothrips ornatissimus</i> Schmutz	Thysanoptera	Thripidae	mulberry	11
<i>Pyrilla perpusilla</i> (Walker)	Hemiptera	Lophopidae	sugarcane	5

Table 1. (cont'd) Arthropod pests of agricultural crops

Pest	Order	Family	Principal crops attacked	See tables
<i>Raodiplosis orientalis</i> Felt	Diptera	Cecidomyiidae	mango	11
<i>Recilia dorsalis</i> (Motschulsky)	Hemiptera	Cicadellidae	rice	2
<i>Rhopalosiphum maidis</i> (Fitch)	Hemiptera	Aphididae	maize, sorghum.	7
<i>Rhynchophorus ferrugineus</i> (Olivier)	Coleoptera	Curculionidae	coconut, oil palm.	4
<i>Rhytidodera simulans</i> (White)	Coleoptera	Cerambycidae	mango, cashew.	11
<i>Scirpophaga excerptalis</i> (Walker)	Lepidoptera	Pyralidae	sugarcane	5
<i>Scirpophaga incertulus</i> (Walker)	Lepidoptera	Pyralidae	rice	2
<i>Scirpophaga magnella</i> (de Joannis)	Lepidoptera	Pyralidae	sugarcane	5
<i>Scirtothrips dorsalis</i> Hood	Thysanoptera	Thripidae	cotton, citrus, groundnut, potato, tomato, egg plant, tobacco.	4,6,9,11
<i>Scotinophara</i> sp.	Hemiptera	Pentatomidae	rice	2
<i>Sesamia inferens</i> (Walker)	Lepidoptera	Noctuidae	rice, maize, sorghum, sugarcane.	2,5,7
<i>Sogatella furcifera</i> (Horvath)	Hemiptera	Delphacidae	rice	2
<i>Sphenarches caffer</i> (Zeller)	Lepidoptera	Pterophoridae	pigeonpea, bean.	3
<i>Sphenoptera ghoshi</i> Thery	Coleoptera	Buprestidae	bean	3
<i>Spilarctia obliqua</i> (Walker)	Lepidoptera	Arctiidae	cabbage, cauliflower, groundnut, pea, soybean, sunflower, castor, pigeonpea, bean, green & blackgram.	3,4,8
<i>Spodoptera litura</i> (Fabricius)	Lepidoptera	Noctuidae	rice, cabbage, cauliflower, mustard, cotton, maize, sorghum, mango, banana, castor, pea, chickpea, soybean, bean, green & blackgram, groundnut, tobacco, egg plant.	2,3,4,6,7,8,9,11
<i>Spodoptera mauritia</i> (Boisduval)	Lepidoptera	Noctuidae	rice	2
<i>Stenachroia elongella</i> Hampson	Lepidoptera	Pyralidae	sorghum	7
<i>Stenchaetothrips biformis</i> (Bagnall)	Thysanoptera	Thripidae	rice	2
<i>Stephanitis typica</i> (Distant)	Hemiptera	Tingidae	banana	11
<i>Syllepte derogata</i> (Fabricius)	Lepidoptera	Pyralidae	cotton, durian.	6,11
<i>Taeniothrips</i> sp.	Thysanoptera	Thripidae	gourd, pumpkin, cucumber, melon.	10
<i>Tarbinskiellus portentosus</i> (Lichtenstein)	Orthoptera	Gryllidae	groundnut, sesame, sunflower, canola.	4
<i>Tessaratoma papillosa</i> (Drury)	Hemiptera	Tessaratomidae	litchi	11
<i>Tetranychus</i> spp.	Acarina	Tetranychidae	cotton, gourd, pumpkin.	6,10
<i>Theretra alecto</i> (Linnaeus)	Lepidoptera	Sphingidae	grape	11
<i>Thrips flavus</i> (Schrank)	Thysanoptera	Thripidae	mustard, egg plant, tomato.	8,9
<i>Thrips palmi</i> Karny	Thysanoptera	Thripidae	cabbage, cauliflower, mustard, gourd, pumpkin, cucumber, melon, tomato, tobacco.	8,9,10

Table 1. (cont'd) Arthropod pests of agricultural crops

Pest	Order	Family	Principal crops attacked	See tables
<i>Thrips tabaci</i> Lindeman	Thysanoptera	Thripidae	cotton, potato.	6,9
<i>Thyanoplusia orichalcea</i> (Fabricius)	Lepidoptera	Noctuidae	chickpea, pea, groundnut, sunflower.	3,4
<i>Toxoptera citricidus</i> (Kirkaldy)	Hemiptera	Aphididae	citrus	11
<i>Toxoptera odinae</i> (Van der Goot)	Hemiptera	Aphididae	mango, cashew.	11
<i>Trabala vishnou</i> (Lefebvre)	Lepidoptera	Lasiocampidae	castor	4
<i>Trialeurodes ricini</i> (Misra)	Hemiptera	Aleyrodidae	castor	4
<i>Trichoplusia ni</i> (Hubner)	Lepidoptera	Noctuidae	cabbage	8
<i>Trochorrhopalus sacchari</i> Marshall	Coleoptera	Curculionidae	sugarcane	5
<i>Urentius hystricellus</i> Richter	Hemiptera	Tingidae	egg plant	9
<i>Varuna litterata</i> (Fabricius)	Crustacea	Grapsidae	rice	2
<i>Xylotrupes gideon</i> (Linnaeus)	Coleoptera	Scarabaeidae	coconut, cashew.	4,11
<i>Zeuzera coffeae</i> Nietner	Lepidoptera	Cossidae	citrus, coffee.	11

Table 2. Arthropod pests of rice

Pest	Order	Family	Myanmar common name	English common name	Rating
<i>Brevennis rehi</i> (Lindinger)	Hemiptera	Pseudococcidae	စပါးဒက်ပိုး	rice mealybug	P
<i>Chilo polychrysus</i> (Meyrick)	Lepidoptera	Pyralidae	ဆစ်ပိုးခေါင်းနက်	darkheaded rice stemborer	++
<i>Chilo suppressalis</i> (Walker)	Lepidoptera	Pyralidae	ဆစ်ပိုးအကြား	striped rice borer	++
<i>Cnaphalocrosis medinalis</i> (Guenee)	Lepidoptera	Pyralidae	ရွက်ခေါက်/ကပ်ပိုး	rice leaf folder	++
<i>Dicladisa armigera</i> (Olivier)	Coleoptera	Chrysomelidae	ပိုးလောင်မီး	rice hispid	+++
<i>Euscyrtus concinnus</i> (de Hann)	Orthoptera	Gryllidae	နံ့ကောင်	cricket	+
<i>Gryllotalpa orientalis</i> Burmeister	Orthoptera	Gryllotalpidae	မြေခွေးပုရစ်	oriental mole cricket	+
<i>Hypomeces squamosus</i> (Fabricius)	Coleoptera	Curculionidae	ရွှေမှုန့်ကျိုင်း	gold dust weevil	P
<i>Leptocorisa acuta</i> (Thunberg)	Hemiptera	Alydidae	စပါးနံ့ရပ်ပိုး	rice earbug , paddybug	+++
<i>Leptocorisa oratorius</i> (Fabricius)	Hemiptera	Alydidae	စပါးနံ့ရပ်ပိုး	rice earbug , paddybug	+++
<i>Melanitis ismene</i> (Cramer)	Lepidoptera	Nymphalidae	စပါးရွက်လိပ်ပြာ	green horned caterpillar	P
<i>Mythimna separata</i> (Walker)	Lepidoptera	Noctuidae	နံ့ဖြတ်ပိုး	paddy armyworm	+++
<i>Nephotettix virescens</i> (Distant)	Hemiptera	Cicadellidae	ဖြတ်စိမ်း	green leafhopper	++
<i>Nezara viridula</i> (Linnaeus)	Hemiptera	Pentatomidae	ပဲဂျိုးစိမ်း	green vegetable bug	P
<i>Nilaparvata lugens</i> (Stal)	Hemiptera	Delphacidae	ဖြတ်ညို	brown planthopper	++
<i>Orseolia oryzae</i> (Wood-mason)	Diptera	Cecidomyiidae	ကြက်သွန်မြိတ်ပိုး	rice gall midge	+++
<i>Oxya hyla</i> (Serville)	Orthoptera	Acrididae	နံ့ကောင်	rice field grasshopper	P
<i>Paraponyx stagnalis</i> Zeller	Lepidoptera	Pyralidae	ရွက်လိပ်ပိုး	rice caseworm, rice case bearer	+++
<i>Parnara guttatus</i> (Bremer and Grey)	Lepidoptera	Hesperiidae	စပါးရွက်ကပ်ပိုး	rice skipper	P
<i>Pelopidas mathias</i> (Fabricius)	Lepidoptera	Hesperiidae	စပါးရွက်ကပ်ပိုး	rice skipper	P
<i>Potamon dayanum</i> (Wood-mason)	Crustacea	Potamidae	လယ်ပုစွန်လုံး	land crab	+
<i>Psalis pennatulata</i> (Fabricius)	Lepidoptera	Lymantriidae	စပါးနုမွေးရှည်	hairy caterpillar	P
<i>Recilia dorsalis</i> (Motschulsky)	Hemiptera	Cicadellidae	ဖြတ်ကြား	zigzag leafhopper	P
<i>Scirpophaga incertulus</i> (Walker)	Lepidoptera	Pyralidae	အဝါရောင်ဆစ်ပိုး	yellow rice stemborer	+++
<i>Scotinophara</i> sp.	Hemiptera	Pentatomidae	ဂျိုးနက်	black rice bug	P
<i>Sesamia inferens</i> (Walker)	Lepidoptera	Noctuidae	ပန်းရောင်ဆစ်ပိုး	pink rice stemborer	+
<i>Sogatella furcifera</i> (Horvath)	Hemiptera	Delphacidae	ဖြတ်ကြောဖြူ	white backed planthopper	+++
<i>Spodoptera litura</i> (Fabricius)	Lepidoptera	Noctuidae	ငမြောင်တောင်	rice cutworm, cluster caterpillar	+++
<i>Spodoptera mauritia</i> (Boisduval)	Lepidoptera	Noctuidae	ငမြောင်တောင်	rice armyworm	+++
<i>Stenchaetothrips biformis</i> (Bagnall)	Thysanoptera	Thripidae	လှေးပိုး	rice thrips	P
<i>Varuna litterata</i> (Fabricius)	Crustacea	Grapsidae	ဖောင်စီးဂဏန်း	quasi-sea crab	+

Table 3. Arthropod pests of pulses

Pest	Order	Family	Myanmar common name	English common name	Pulses attacked	Rating
<i>Acanthoscelides obtectus</i> (Say)	Coleoptera	Bruchidae	ပဲခေ့ထိုးပိုး	bean bruchid	3,6	++
<i>Acheta</i> sp.	Orthoptera	Gryllidae	ငှက်	cricket	1,2,3,4	+
<i>Agrotis ipsilon</i> (Hufnagel)	Lepidoptera	Noctuidae	ပင်ဖြတ်ပိုး	black cutworm	1,3,5,6	+
<i>Aphis craccivora</i> (Koch)	Hemiptera	Aphididae	ခြံ	cowpea aphid	2,3,4	+++
<i>Aphis fabae</i> (Scopoli)	Hemiptera	Aphididae	ခြံ	black bean aphid	2,4,5,6	+++
<i>Aproaerema modicella</i> (Deventer)	Lepidoptera	Gelechiidae	ပဲရွက်လိပ်ရွက်ကပ်	groundnut leafminer	2,4,6	+
<i>Archips micaceanus</i> (Walker)	Lepidoptera	Tortricidae	ရွက်လိပ်	soybean leafroller	4,6	+
<i>Callosobruchus</i> sp.	Coleoptera	Bruchidae	ပဲခေ့ထိုးပိုး	cowpea bruchid	3,4,6	+++
<i>Empoasca flavescens</i> (Fabricius)	Hemiptera	Cicadellidae	မြှုပ်ပိုး	pulse leafhopper	2	++
<i>Epilachna</i> sp.	Coleoptera	Coccinellidae	လိပ်ခုံးကျိုင်း	epilach beetle	3,4	+
<i>Etiella zinckenella</i> (Treitschke)	Lepidoptera	Pyralidae	ပဲထောင်ထိုးပိုး	pea pod borer	2,6	++
<i>Euchrysops cnejus</i> (Fabricius)	Lepidoptera	Lycaenidae	ပဲထောင်ထိုးလိပ်ပြာ	bean blue butterfly	2,6	+
<i>Exelastis atomosa</i> (Walsingham)	Lepidoptera	Pterophoridae	ငှက်မွှေးဖလံ	bean plume moth	2,6	P
<i>Helicoverpa armigera</i> (Hubner)	Lepidoptera	Noctuidae	သီးလုံးခေါက်ပိုး	cotton bollworm	1,2,3,6	+++
<i>Lampides boeticus</i> (Linnaeus)	Lepidoptera	Lycaenidae	ပဲလိပ်ပြာ	pea blue butterfly	2,3	+
<i>Maruca vitrata</i> (Fabricius)	Lepidoptera	Pyralidae	စက်ပြောက်သီးလုံးဖောက်ပိုး	legume pod borer	2	+++
<i>Medythia suturalis</i> (Motschulsky)	Coleoptera	Chrysomelidae	လှေးကျိုင်း	striped flea beetle	3,5,6	++
<i>Melanagromyza obtusa</i> (Malloch)	Diptera	Agromyzidae	သီးထိုးယင်	pod fly	2	++
<i>Mylabris pustulata</i> (Thunberg)	Coleoptera	Meloidae	ဖူးယောင်ကျိုင်း	blister beetle	2,5	+
<i>Nezara viridula</i> (Linnaeus)	Hemiptera	Pentatomidae	ပဲဂျိုးခိမ်း	green vegetable bug	3,6	++
<i>Odontotermes</i> sp.	Isoptera	Termitidae	ခြံ	termite	1,2,3,6	++
<i>Omiodes indicata</i> (Fabricius)	Lepidoptera	Pyralidae	ပဲရွက်ထိုးပိုး	soybean webworm	5	P
<i>Ophiomyia phaseoli</i> (Tryon)	Diptera	Agromyzidae	ပဲပင်စည်သိုးယင်	bean stem fly	1,2,3,5	++
<i>Phodoryctis caerulea</i> (Meyrick)	Lepidoptera	Gracillariidae	ရွက်ထွင်းပိုး	bean leafminer	4	P
<i>Polyphagotarsonemus latus</i> (Banks)	Acarina	Tetranychidae	မွှားပင်, ကုန်း	yellow tea mite	3,5	+
<i>Sphenarches caffer</i> (Zeller)	Lepidoptera	Pterophoridae	ငှက်မွှေးဖလံ	bean plume moth	2,6	+
<i>Sphenoptera ghoshi</i> Thery	Coleoptera	Buprestidae	ပဲပင်စည်သိုးကျိုး	bean stem beetle	6	+
<i>Spilarctia obliqua</i> (Walker)	Lepidoptera	Arctiidae	ရွက်စုံစားရွက်	jute hairy caterpillar	2,3,4,5,6	++
<i>Spodoptera litura</i> (Fabricius)	Lepidoptera	Noctuidae	ငါးမြောင်ဘောင်	cluster caterpillar	1,3,4,5,6	+++
<i>Thysanoplusia orichalcea</i> (Fabricius)	Lepidoptera	Noctuidae	ထွက်ကောင်ခိမ်း	flax caterpillar	1,3	P

Key: 1. Chickpea ; 2. Pigeonpea; 3. Pea; 4. Soybean; 5. Green and black gram; 6. Bean

Table 4. Arthropod pests of oil seed crops

Pest	Order	Family	Myanmar common name	English common name	Oil seed crop attacked	Rating
<i>Achaea janata</i> (Linnaeus)	Lepidoptera	Noctuidae	ထွာကောင်	castor semi-looper	7	P
<i>Acherontia styx</i> (Westwood)	Lepidoptera	Sphingidae	နှမ်းဖလံ	small death's head hawk moth	2	P
<i>Aleurodicus destructor</i> Mackie	Hemiptera	Aleurodidae	အုန်းယင်ဖြူ	coconut whitefly	5	P
<i>Amsacta lactinea</i> (Cramer)	Lepidoptera	Arctiidae	ရူနီ	red tiger moth	1	P
<i>Anomala antiqua</i> (Gyllenhal)	Coleoptera	Scarabaeidae	နှမ်းကျိုင်းနက်	black sesame beetle	1,2	+
<i>Antigastra catalaunalis</i> (Duponchel)	Lepidoptera	Pyrilidae	နှမ်းရွက်လိပ်	sesame webworm	2	+
<i>Aphis craccivora</i> (Koch)	Hemiptera	Aphididae	ပြ	cow pea aphid	1	++
<i>Aproaerema modicella</i> (Deventer)	Lepidoptera	Gelechiidae	မြေပဲရွက်လိပ်/ရွက်ကပ်	groundnut leafminer	1	+++
<i>Archips micaceanus</i> (Walker)	Lepidoptera	Tortricidae	ပဲရွက်လိပ်	soybean leafroller	1	P
<i>Ariadne merione</i> (Cramer)	Lepidoptera	Nymphalidae	ကြက်ဆူရူကောင်	spiny castor caterpillar	7	P
<i>Artona catoxantha</i> (Hampson)	Lepidoptera	Zygaenidae	အုန်းလိပ်ပြာ	coconut leaf moth	5,6	P
<i>Aspidiotus destructor</i> Signoret	Hemiptera	Diaspididae	အုန်းကြေးရိုး	coconut scale	5,6	P
<i>Aularches miliaris</i> (Linnaeus)	Orthoptera	Gryllidae	စက်ပျောက်နှံကောင်	spotted grasshopper	6	P
<i>Bemisia tabaci</i> (Gennadius)	Hemiptera	Aleyrodidae	ယင်ဖြူ	tobacco whitefly	7	+
<i>Brachytripes</i> sp.	Orthoptera	Gryllidae	ဆီအုန်းပုရစ်	oil palm cricket	6	P
<i>Caliothrips indicus</i> (Bagnall)	Thysanoptera	Thripidae	မြေပဲလှေး	groundnut thrips	1	+
<i>Chrysomphalus aonidum</i> (Linnaeus)	Hemiptera	Diaspididae	အုန်းကြေးရိုး	purple scale	5	P
<i>Condica capensis</i> Guenee	Lepidoptera	Noctuidae	ပန်းနှမ်းရူကောင်	safflower caterpillar	4	P
<i>Coptotermes curvignathus</i> (Holm)	Isoptera	Rhinotermitidae	ခြေ	coconut termite	1,5,6	+
<i>Empoasca</i> sp.	Hemiptera	Cicadellidae	ဖြူတံစိမ်း	jassid	1,3,4,7	++
<i>Elasmopalpus sordidus</i> (Fabricius)	Hemiptera	Lygaeidae	နှမ်းစေ့စုပ်ကျဉ်း	sesame seed bug	2	+
<i>Eysarcoris guttiger</i> (Thunberg)	Hemiptera	Pentatomidae	နှမ်းစက်ပျောက်ကျဉ်း	two-spotted sesame bug	2	P
<i>Helicoverpa armigera</i> (Hubner)	Lepidoptera	Noctuidae	အပွင့်စားရိုး	head borer, boll worm	1,2,3	++
<i>Heteroderes lenis</i> Cand	Coleoptera	Elateridae	ဆတ်တောကံရိုး	wire worm	1	+
<i>Holotrichia</i> sp.	Coleoptera	Scrabaeidae	ဖိုးလမင်းကျိုင်း	chafer beetle	1	++
<i>Hypolixus Pica</i> (Fabricius)	Coleoptera	Curculionidae	ပင်စည်ထိုးနှာတံရှည်ကျိုင်း	amaranthus stem weevil	3,5	P
<i>Odontotermes</i> sp.	Isoptera	Termitidae	ခြေ	termite	1,2,5,6	++
<i>Opisina arenosella</i> (Walker)	Lepidoptera	Xyloryctidae	အုန်းရူကောင်	palm leaf caterpillar	5,6	+
<i>Orgyia turbata</i> (Butler)	Lepidoptera	Lymantriidae	မြေပဲရူမွေးရှည်	groundnut hairy caterpillar	1	+

Key: 1. Groundnut ; 2. Sesame; 3. Sunflower; 4. Safflower; 5. Coconut; 6. Oil palm; 7. Castor; 8. Canola and others

Table 4. (cont'd) Arthropod pests of oil seed crops

Pest	Order	Family	Myanmar common name	English common name	Oil seed crop attacked	Rating
<i>Orosius orientalis</i> (Matsumura)	Hemiptera	Cicadellidae	နှမ်းဖြတ်ညို	sesame jassid	2	++
<i>Oryctes rhinoceros</i> (Linnaeus)	Coleoptera	Scarabaeidae	အုန်းကျိုင်း	rhinoceros beetle	5,6	+
<i>Parasa lepida</i> (Cramer)	Lepidoptera	Limacodidae	ကြက်ဆူနုမွေးစုပ်	blue striped nettle caterpillar	7	P
<i>Rhynchophorus ferrugineus</i> (Olivier)	Coleoptera	Curculionidae	အုန်းနှာတံရှည်ကျိုင်း	Asiatic palm weevil	5,6	P
<i>Scirtothrips dorsalis</i> Hood	Thysanoptera	Thripidae	လှေးပိုး	chilli thrips	1	+
<i>Spilarctia obliqua</i> (Walker)	Lepidoptera	Arctiidae	ရွက်စုံစားခုဝါ	jute hairy caterpillar	1,3,7	+
<i>Spodoptera litura</i> (Fabricius)	Lepidoptera	Noctuidae	ငမေ့ောင်ကောင်	cluster caterpillar	1,7	+++
<i>Tarbinskiellus portentosus</i> (Lichtenstein)	Orthoptera	Gryllidae	ပုရစ်ကြီး	large brown cricket	1,2,3,8	+++
<i>Thysanoplusia orichalcea</i> (Fabricius)	Lepidoptera	Noctuidae	ထွာကောင်စိမ်း	flax caterpillar	1,3	+
<i>Trabala vishnou</i> (Lefebvre)	Lepidoptera	Lasiocampidae	ကြက်ဆူနုမွေးရှည်	castor hairy caterpillar	7	P
<i>Trialeurodes ricini</i> (Misra)	Hemiptera	Aleyrodidae	ကြက်ဆူယင်ဖြူ	castor whitefly	7	P
<i>Xylotrupes gideon</i> (Linnaeus)	Coleoptera	Scarabaeidae	အုန်းကျိုင်း	elephant beetle	5	+

Key: 1. Groundnut ; 2. Sesame; 3. Sunflower; 4. Safflower; 5. Coconut; 6. Oil palm; 7. Castor; 8. Canola and others

Table 5. Arthropod pests of sugarcane

Pest	Order	Family	Myanmar common name	English common name	Rating
<i>Abidama producta</i> (Walker)	Hemiptera	Cercopidae	ကြဲဖြုတ်ပိုး	sugarcane frog hopper	P
<i>Aleurolobus barodensis</i> (Maskell)	Hemiptera	Aleyrodidae	ကြဲယင်ဖြူ	sugarcane whitefly	P
<i>Alissonotum impressicole</i> Arrow	Coleoptera	Scarabaeidae	ကျိုင်းနက်	black sugarcane beetle	+ + +
<i>Anomala antiqua</i> (Gyllenhal)	Coleoptera	Scarabaeidae	ပိုးလမင်းကျိုင်း	black beetle	+ +
<i>Callitettix versicolor</i> (Fabricius)	Hemiptera	Cercopidae	ကြဲရှည်မျှပ်ပိုး	sugarcane spittle bug	P
<i>Ceratovacuna lanigera</i> (Zehntner)	Hemiptera	Aphididae	ကြဲပြဲပိုး	white sugarcane aphid	P
<i>Chilo auricilius</i> (Dudgeon)	Lepidoptera	Pyralidae	ကြဲဆစ်ပိုး	stalk borer	+
<i>Chilo infuscatellus</i> Snellen	Lepidoptera	Pyralidae	ကြဲဆစ်ပိုး	yellow top-borer	+
<i>Chilo suppressalis</i> (Walker)	Lepidoptera	Pyralidae	ကြဲဆစ်ပိုး	striped sugarcane borer	+ +
<i>Chilo tumidicostalis</i> (Hampson)	Lepidoptera	Pyralidae	ကြဲဆစ်ပိုး	spotted sugarcane stem borer	+ + +
<i>Gryllotalpa orientalis</i> Burmeister	Orthoptera	Gryllotalpidae	မြေခွေးပုရစ်	oriental mole cricket	P
<i>Heteroderes lenis</i> Candeze	Coleoptera	Elateridae	ဆတ်တောက်ပိုး	wire worm	+
<i>Holotrichia</i> sp.	Coleoptera	Scarabaeidae	ပိုးလမင်းကျိုင်း	sugarcane beetle	+
<i>Hypomeces squamosus</i> (Fabricius)	Coleoptera	Curculionidae	နှာတံရှည်ကျိုင်း	green weevil	P
<i>Kiritshenkella sacchari</i> (Green)	Hemiptera	Pseudococcidae	ကြေးပိုး	sugarcane mealy bug	+
<i>Macrotermes</i> sp.	Isoptera	Termitidae	ခြေ	sugarcane termite	+ +
<i>Pyrrilla perpusilla</i> (Walker)	Hemiptera	Lophopidae	ကြဲဖြုတ်ပိုး	sugarcane pyrrilla	P
<i>Scirpophaga excerptalis</i> (Walker)	Lepidoptera	Pyralidae	ခေါင်ညွန့်ထိုးပိုး	sugarcane top borer	+ + +
<i>Scirpophaga magnella</i> de Joannis	Lepidoptera	Pyralidae	ခေါင်ညွန့်ထိုးပိုး	sugarcane top borer	+ + +
<i>Sesamia inferens</i> (Walker)	Lepidoptera	Noctuidae	ပန်းရောင်ဆစ်ပိုး	pink stem borer	+
<i>Trochorrhopalus sacchari</i> Marshall	Coleoptera	Curculionidae	နှာတံရှည်ကျိုင်း	sugarcane weevil	P

Table 6. Arthropod pests of cotton

Pest	Order	Family	Myanmar common name	English common name	Rating
<i>Agrotis ipsilon</i> (Hufnagel)	Lepidoptera	Noctuidae	ပင်ဖြတ်ပိုး	black cutworm	+
<i>Alcidodes affaber</i> (Aurivillius)	Coleoptera	Curculionidae	ခခါင်ညွန့်ထိုးနှာတ်ရှည်ကျိုင်း	cotton shoot weevil	P
<i>Amrasca devastans</i> (Distant)	Hemiptera	Cicadellidae	ဝါဖြတ်ပိုး	cotton leafhopper	++
<i>Anomis flava</i> (Fabricius)	Lepidoptera	Noctuidae	ထွာကောင်	cotton semi-looper	P
<i>Aphis gossypii</i> Glover	Hemiptera	Aphididae	ဖြဲပိုး	cotton aphid, melon aphid	+++
<i>Bemisia tabaci</i> (Gennadius)	Hemiptera	Aleyrodidae	ယင်ဖြူ	tobacco whitefly	+
<i>Dysdercus cingulatus</i> (Fabricius)	Hemiptera	Pyrrhocoridae	ဝါပိုးနီ	cotton stainer bug	++
<i>Earias insulana</i> (Boisduval)	Lepidoptera	Noctuidae	ဆူးပါသီးလုံးဖောက်ပိုး	spiny bollworm	+
<i>Earias vittella</i> (Fabricius)	Lepidoptera	Noctuidae	စက်ပြောက်သီးလုံးဖောက်ပိုး	rough bollworm, spotted bollworm	+++
<i>Empoasca</i> sp.	Hemiptera	Cicadellidae	ဖြတ်ပိုး	cotton jassid	+
<i>Helicoverpa armigera</i> (Hubner)	Lepidoptera	Noctuidae	ဝါသီးလုံးဖောက်ပိုး	cotton bollworm	+++
<i>Hypomeces squamosus</i> (Fabricius)	Coleoptera	Curculionidae	အစိမ်းရောင်နှာတ်ရှည်ကျိုင်း	green weevil	P
<i>Nezara viridula</i> (Linnaeus)	Hemiptera	Pentatomidae	ဂျိုပိုးစိမ်း	green vegetable bug	P
<i>Pectinophora gossypiella</i> (Saunders)	Lepidoptera	Gelechiidae	ပန်းရောင်သီးလုံးဖောက်ပိုး	pink bollworm	++
<i>Phycita infusella</i> (Meyrick)	Lepidoptera	Pyralidae	ရွက်ထွေးပိုး	cotton bud caterpillar	P
<i>Scirtothrips dorsalis</i> Hood	Thysanoptera	Thripidae	လှေးပိုး	cotton thrips	++
<i>Spodoptera litura</i> (Fabricius)	Lepidoptera	Noctuidae	ရွက်စားပိုး	cluster caterpillar	++
<i>Syllepte derogata</i> (Fabricius)	Lepidoptera	Pyralidae	ဝါရွက်လိပ်	cotton leaf roller	P
<i>Tetranychus</i> spp.	Acarina	Tetranychidae	မွှားပင်, ကျ	cotton mite	+++
<i>Thrips tabaci</i> Lindeman	Thysanoptera	Thripidae	လှေးပိုး	onion thrips	++

Table 7. Arthropod pests of maize and sorghum

Pest	Order	Family	Myanmar common name	English common name	Plant attacked	Rating
<i>Adoretus birmanus</i> Arrow	Coleoptera	Scarabaeidae	မိုးလမင်းကျိုင်း	chafer beetle	1,2	P
<i>Agrotis ipsilon</i> (Hufnagel)	Lepidoptera	Noctuidae	ဝင်ဖြတ်ပိုး	black cutworm	1,2	+
<i>Agrotis segetum</i> (Denis and Schiffermuller)	Lepidoptera	Noctuidae	ဝင်ဖြတ်ပိုး	black cutworm	1,2	+
<i>Amrasca</i> sp.	Hemiptera	Cicadellidae	ဖြူတံပိုး	maize leaf hopper	1	+
<i>Amsacta albistriga</i> (Walker)	Lepidoptera	Arctiidae	ရုခွေးရှည်	hairy caterpillar	1,2	+
<i>Atherigona soccata</i> (Rondani)	Diptera	Muscidae	နံ့ခါးပြောင်းခေါင်ညှန်ထိုးယင်	sorghum shoot fly	2	+
<i>Chilo</i> spp.	Lepidoptera	Pyralidae	ဆစ်ပိုး	stem borer	2	+
<i>Chilo suppressalis</i> (Walker)	Lepidoptera	Pyralidae	ဆစ်ပိုးအကြား	striped rice borer	1	+
<i>Frankliniella</i> sp.	Thysanoptera	Thripidae	လှေးပိုး	thrips	1	P
<i>Helicoverpa armigera</i> (Hubner)	Lepidoptera	Noctuidae	သီးလုံးဖောက်ပိုး	cotton bollworm	1	+++
<i>Hypomeces squamosus</i> (Fabricius)	Coleoptera	Curculionidae	အစိမ်းရောင်နှာတံရှည်ကျိုင်း	green weevil	1	+
<i>Macrotermes</i> spp.	Isoptera	Termitidae	ခြံ	termite	1,2	++
<i>Marasmia trapezalis</i> (Guenee)	Lepidoptera	Pyralidae	ရွက်ထွေးပိုး	sorghum webworm	2	++
<i>Melanaphis sacchari</i> (Zehntner)	Hemiptera	Aphididae	ပြဲပိုး	yellow sugarcane aphid	2	+
<i>Mythimna</i> sp.	Lepidoptera	Noctuidae	ဝင်ဖြတ်ပိုး	cutworm	1	++
<i>Mythimna separata</i> (Walker)	Lepidoptera	Noctuidae	ဝင်ဖြတ်ပိုး	paddy armyworm	1,2	++
<i>Nezara viridula</i> (Linnaeus)	Hemiptera	Pentatomidae	ဂျိုးစိမ်း	green vegetable bug	1,2	+
<i>Orseolia andropoginis</i> Felt	Diptera	Cecidomyiidae	နံ့စေ့ထိုးယင်	sorghum grain midge	2	P
<i>Ostrinia furnacalis</i> (Guenee)	Lepidoptera	Pyralidae	ပြောင်းစေ့ထိုးပိုး	Asian corn borer	1,2	+
<i>Rhopalosiphum maidis</i> (Fitch)	Hemiptera	Aphididae	ပြောင်းဖူးပြ	maize aphid	1,2	++
<i>Sesamia inferens</i> (Walker)	Lepidoptera	Pyralidae	ပန်းရောင်ဆစ်ပိုး	pink stemborer	1,2	+
<i>Spodoptera litura</i> (Fabricius)	Lepidoptera	Noctuidae	ငမြောင်တောင်	cluster caterpillar	1,2	+++
<i>Stenachroia elongella</i> Hampson	Lepidoptera	Pyralidae	နံ့စားပြောင်းစေ့ထွေးပိုး	sorghum caterpillar	2	+

Key: 1. Maize; 2. Sorghum

Table 8. Arthropod pests of cruciferous crops

Pest	Order	Family	Myanmar common name	English common name	Plant attacked	Rating
<i>Agrotis ipsilon</i> (Hufnagel)	Lepidoptera	Noctuidae	ပင်ဖြတ်ပိုး	black cutworm	1,2	++
<i>Agrotis segetum</i> (Denis and Schiffermuller)	Lepidoptera	Noctuidae	ပင်ဖြတ်ပိုး	black cutworm	1,2,3	+
<i>Athalia lugens</i> (Klug)	Hymenoptera	Tenthredinidae	မုံညှင်း၊ မုံလာယင်	mustard sawfly	1,2,3	+
<i>Bagrada hilaris</i> (Burmeister)	Hemiptera	Pentatomidae	ရောင်မုံကျပိုး	painted bug	1,2,3	+
<i>Brevicoryne brassicae</i> (Linnaeus)	Hemiptera	Aphididae	ဖြဲပိုး	cabbage aphid	1,2	++
<i>Crocidolomia pavonana</i> (Fabricius)	Lepidoptera	Pyralidae	မုံညှင်း၊ မုံလာနူ	cabbage cluster caterpillar	1,2,3	+
<i>Dorylus orientalis</i> Westwood	Hymenoptera	Formicidae	ပုရွက်ဆိတ်နီ	oriental army ant	1,2	P
<i>Eurydema pulchrum</i> (Westwood)	Hemiptera	Pentatomidae	ကော်ဖီကျပိုး	cabbage bug	1,2	P
<i>Helicoverpa armigera</i> (Hubner)	Lepidoptera	Noctuidae	သီးလုံးဖောက်ပိုး	cotton bollworm	1,2	++
<i>Hellula undalis</i> (Fabricius)	Lepidoptera	Pyralidae	ပင်စည်ထွင်းပိုး	cabbage centre grub	1,2,3	+
<i>Lipaphis erysimi</i> (Kaltenbach)	Hymenoptera	Aphididae	ဖြဲပိုး	cabbage aphid	1,2	++
<i>Phyllotreta striolata</i> (Fabricius)	Coleoptera	Chrysomelidae	လေးကျိုင်း	cabbage flea beetle	1,2,3	+
<i>Pieris canidia</i> (Sparrmann)	Lepidoptera	Pieridae	ကော်ဖီလိပ်ပြာဖြူ	small cabbage butterfly	1,2	++
<i>Pieris rapae</i> (Linnaeus)	Lepidoptera	Pieridae	ကော်ဖီလိပ်ပြာဖြူ	small cabbage butterfly	1,2	++
<i>Plutella xylostella</i> (Linnaeus)	Lepidoptera	Plutellidae	ကော်ဖီစိန်ကွက်ပလံ	diamondback moth	1,2	+++
<i>Spilarctia obliqua</i> (Walker)	Lepidoptera	Arctiidae	ရွက်ရုံစားနူဝါ	jute hairy caterpillar	1,2	+
<i>Spodoptera litura</i> (Fabricius)	Lepidoptera	Noctuidae	ငဖြောင်တောင်	cluster caterpillar	1,2,3	++
<i>Thrips flavus</i> Schrank	Thysanoptera	Thripidae	လေးပိုး	thrips	3	+
<i>Thrips palmi</i> Karny	Thysanoptera	Thripidae	လေးပိုး	melon thrips	1,2,3	+
<i>Trichoplusia ni</i> (Hubner)	Lepidoptera	Noctuidae	ကော်ဖီထွာကောင်	cabbage looper	1	+

Key: 1. Cabbage; 2. Cauliflower; 3. Mustard

Table 9. Arthropod pests of solanaceous crops

Pest	Order	Family	Myanmar common name	English common name	Plant attacked	Rating
<i>Acherontia styx</i> (Westwood)	Lepidoptera	Sphingidae	နွမ်းဝလံ	small death's head hawk moth	2	+
<i>Agrotis ipsilon</i> (Hufnagel)	Lepidoptera	Noctuidae	ပင်ဖြတ်ပိုး	black cutworm	1,5	++
<i>Agrotis segetum</i> (Denis and Schiffermuller)	Lepidoptera	Noctuidae	အာလူးဖြတ်ပိုး	common cutworm	1,5	++
<i>Amrasca</i> sp.	Hemiptera	Cicadellidae	ဝါဖြူပိုး	cotton leafhopper	2	++
<i>Aphis gossypii</i> Glover	Hemiptera	Aphididae	ပြဲပိုး	cotton aphid, melon aphid	1,2	++
<i>Aspidomorpha indica</i> Boheman	Coleoptera	Chrysomelidae	ကစွန်းကျိုင်း	tortoise beetle	6	P
<i>Atractomorpha crenulata</i> (Fabricius)	Orthoptera	Pyrgomorphidae	ဆေးရွက်ကြီးနံ့ကောင်	tobacco grasshopper	5	P
<i>Bactrocera cucurbitae</i> (Coquillet)	Diptera	Tephritidae	သစ်သီးထိုးယင်	melon fruitfly	4	+
<i>Bactrocera dorsalis</i> (Hendel)	Diptera	Tephritidae	သစ်သီးထိုးယင်	oriental fruitfly	2,3,4	++
<i>Bagrada hilaris</i> (Burmeister)	Hemiptera	Pentatomidae	ရောင်ရဲကျဲပိုး	painted bug	1,2	+
<i>Bemisia tabaci</i> (Gennadius)	Hemiptera	Aleyrodidae	ဆေးရွက်ကြီးယင်ဖြူ	tobacco white fly	1,5	+
<i>Cylas formicarius</i> (Fabricius)	Coleoptera	Apionidae	ကစွန်းနှာတံရှည်ကျိုင်း	sweet potato weevil	6	P
<i>Cyrtopeltis tenuis</i> Reuter	Hemiptera	Miridae	ကျဲပိုး	tomato bug	3,5	P
<i>Empoasca flavescens</i> (Fabricius)	Hemiptera	Cicadellidae	ဖြူပိုး	egg plant jassid	2	P
<i>Epilachna pusillanima</i> Mulsant	Coleoptera	Coccinellidae	၂၀ ပျောက်ကျိုင်း	20 spotted lady bird beetle	1	++
<i>Epilachna vigintioctopunctata</i> (Fabricius)	Coleoptera	Coccinellidae	၂၈ ပျောက်ကျိုင်း	28 spotted lady bird beetle	2	++
<i>Eublemma olivacea</i> (Walker)	Lepidoptera	Noctuidae	ခရမ်းရွက်လိပ်	eggplant leaf roller	2	++
<i>Helicoverpa armigera</i> (Hubner)	Lepidoptera	Noctuidae	သီးလုံးဖောက်ပိုး	cotton bollworm	1,3,5	+++
<i>Helicoverpa assulta</i> (Guenee)	Lepidoptera	Noctuidae	သီးလုံးဖောက်ပိုး	tobacco budworm	5	++
<i>Hypomaces Squamosus</i> (Fabricius)	Coleoptera	Curculionidae	အစိမ်းရောင်နှာတံရှည်ကျိုင်း	green weevil	5	+
<i>Leucinodes orbonalis</i> (Guenee)	Lepidoptera	Pyalidae	ခရမ်းသီးပိုး	brinjal fruit borer	2	++
<i>Myzus persicae</i> (Sulzer)	Hemiptera	Aphididae	ပြဲ	peach aphid	1,3,5	++
<i>Nezara viridula</i> (Linnaeus)	Hemiptera	Pentatomidae	ကျဲပိုးခိမ်း	green vegetable bug	1,4	+
<i>Phthorimaea operculella</i> (Zeller)	Lepidoptera	Gelechiidae	အာလူးပိုး	potato tuber moth	1	++
<i>Phyllotreta</i> sp.	Coleoptera	Chrysomelidae	လှေးကျိုင်း	flea beetle	1	+
<i>Polyphagotrasonemus latus</i> (Banks)	Acarina	Tetranychidae	မွှားဝင်ကူ	yellow tea mite	1,2,3	+
<i>Pseudococcus</i> sp.	Hemiptera	Pseudococcidae	အကြေးပိုး	potato mealy bug	1	P
<i>Scirtothrips dorsalis</i> Hood	Thysanoptera	Thripidae	လှေးပိုး	cotton thrips	1,2,3,5	++
<i>Spodoptera litura</i> (Fabricius)	Lepidoptera	Noctuidae	ငရဲဖြောင်တောင်	cluster caterpillar	2,5	+++

Key: 1. Potato; 2. Egg plant; 3. Tomato; 4. Capsicum; 5. Tobacco; 6. Sweet potato

Table 9. (cont'd) Arthropod pests of solanaceous crops

Pest	Order	Family	Myanmar common name	English common name	Plant attacked	Rating
<i>Thrips flavus</i> Schrank	Thysanoptera	Thripidae	လှေ့ဖိုး	thrips	2,3	+
<i>Thrips palmi</i> Karny	Thysanoptera	Thripidae	လှေ့ဖိုး	melon thrips	3,5	+
<i>Thrips tabaci</i> Lindeman	Thysanoptera	Thripidae	လှေ့ဖိုး	onion thrips	1	++
<i>Urentius hystricellus</i> Richter	Hemiptera	Tingidae	ဂျပ်ဖိုး	egg plant lace bug	2	P
<i>Zeuzera coffeae</i> Nietner	Lepidoptera	Cossidae				

Key: 1. Potato; 2 . Egg plant; 3. Tomato; 4. Capsicum; 5. Tobacco; 6. Sweet potato

Table 10. Arthropod pests of cucurbit crops

Pest	Order	Family	Myanmar common name	English common name	Plant attacked	Rating
<i>Aphis gossypii</i> Glover	Hemiptera	Aphididae	ပြဲဖိုး	cotton aphid, melon aphid	1,2,4	++
<i>Apomecyna histrio</i> (Fabricius)	Coleoptera	Cerambycidae	ပင်စည်ထိုးကျိုင်း	melon stemborer	1,2,4,5	+
<i>Aulacophora foveicollis</i> (Lucas)	Coleoptera	Chrysomelidae	ဘူး၊ ဖရုံကျိုင်း	red pumpkin beetle	1,2,3,4	++
<i>Bactrocera cucurbitae</i> (Coquillett)	Diptera	Tephritidae	သီးထိုးယင်	melon fly	1,2,3,4,5	+++
<i>Coridius fuscus</i> (Westwood)	Hemiptera	Dinidoridae	ဂျပ်ဖိုး	pumpkin bug	2	P
<i>Diaphania indica</i> (Saunders)	Lepidoptera	Pyralidae	ရွက်လိပ်ဖိုး	pumpkin leaf roller	2	P
<i>Epilachna indica</i> Mulsant	Coleoptera	Coccinellidae	ရွက်စုံစားကျိုင်း	melon beetle	1,2,3,4,5	+
<i>Epilachna 28-punctata</i>	Coleoptera	Coccinellidae	ရွက်စုံစားကျိုင်း	melon beetle	1,2,3,4,5	+
<i>Taeniothrips</i> sp.	Thysanoptera	Thripidae	လှေ့ဖိုး	gladiolus thrips	1,2,4,5	P
<i>Tetranychus</i> spp.	Acarina	Tetranychidae	မွှားပင်, ကျ	red spider mite	1,2	+
<i>Thrips palmi</i> Karny	Thysanoptera	Thripidae	လှေ့ဖိုး	cotton leaf thrips	1,2,4,5	+

Key: 1. Gourd; 2 . Pumpkin; 3. Bitter gourd; 4. Cucumber; 5. Melon

Table 11. Arthropod pests of fruits

Pest	Order	Family	Myanmar common name	English common name	Plant attacked	Rating
<i>Agrilus citri</i> Thery	Coleoptera	Buprestidae	ရှောက်အခေါက်ထိုးပိုး	citrus bark borer	2	+
<i>Alcidodes frenatus</i> (Faust)	Coleoptera	Curculionidae	သရက်အညွန့်ထိုးပိုး	mango shoot weevil	1	+
<i>Aleurocanthus woglumi</i> Ashby	Hemiptera	Psyllidae	ရှောက်ယင်နက်	citrus blackfly	2	+
<i>Aleurodicus dispersus</i> Russell	Hemiptera	Aleyrodidae	ယင်ဖြူ	spiraling whitefly	4,5	+
<i>Ampllypterus panopus</i> (Cramer)	Lepidoptera	Sphingidae	စွန်လိပ်ပြာ	giant hawk moth	1,11	P
<i>Amritodus atkinsoni</i> (Lethierry)	Hemiptera	Cicadellidae	သရက်ဖြူတံပိုး	mango leafhopper	1	+
<i>Anoplophora versteegii</i> (Ritsema)	Coleoptera	Cerambycidae	ရှောက်ပင်စည်ထိုးပိုး	citrus stem borer	2	+
<i>Aonidiella aurantii</i> (Maskell)	Hemiptera	Diaspididae	အနီကြေးပိုး	red scale	2	P
<i>Aphis gossypii</i> Glover	Hemiptera	Aphididae	ဖြူပိုး	cotton aphid, melon aphid	4,5	+++
<i>Apriona germari</i> (Hope)	Coleoptera	Cerambycidae	ခူးရင်းပင်စည်ထိုးပိုး	longhorn stem borer	11	+
<i>Aristobia approximata</i> (Thomson)	Coleoptera	Cerambycidae	ပင်စည်ထိုးပိုး	teakstem borer	1	+
<i>Attacus atlas</i> (Linnaeus)	Lepidoptera	Saturniidae	ဆင်လိပ်ပြာ	atlas moth	1	P
<i>Aulacaspis tubercularis</i> Newstead	Hemiptera	Diaspididae	အကြေးပိုး	mango scale	1	+
<i>Aularches miliaris</i> (Linnaeus)	Orthoptera	Pyrgomorphidae	နံ့ကောင်	spotted grasshopper	6	+
<i>Bactrocera cucurbitae</i> (Coquillett)	Diptera	Tephritidae	သစ်သီးထိုးယင်	melon fruitfly	3	++
<i>Bactrocera dorsalis</i> (Hendel)	Diptera	Tephritidae	သစ်သီးထိုးယင်	oriental fruitfly	1,2,4,9	+++
<i>Batocera rufomaculata</i> (De Geer)	Coleoptera	Cerambycidae	သရက်ပင်စည်ထိုးပိုး	mango stem borer	1,9	+
<i>Bemisia</i> sp.	Hemiptera	Aleyrodidae	ယင်ဖြူ	white fly	1,4,5	P
<i>Carpomyia vesuviana</i> Costa	Diptera	Tephritidae	ဖိုးသီးထိုးယင်	jujube fruitfly	11	P
<i>Ceroplastes ceriferus</i> (Fabricius)	Hemiptera	Coccidae	အဖြူရောင်ကြေးပိုး	white waxy scale	11	P
<i>Chrysomphalus aonidum</i> (Linnaeus)	Hemiptera	Diaspididae	ခရမ်းရောင်ကြေးပိုး	purple scale	2,4,5	+
<i>Cosmopolites sordidus</i> (Germar)	Coleoptera	Curculionidae	ငှက်ပျောပင်စည်ထိုးကျိုင်း	banana weevil	6	+++
<i>Cricula trifenestrata</i> Helfer	Lepidoptera	Saturniidae	သရက်ခွံကောင်	mango hairy caterpillar	1,4,11	++
<i>Deporaus marginatus</i> (Pascoe)	Coleoptera	Curculionidae	သရက်ရွက်စားကျိုင်း	mango leaf-cutting weevil	1	P
<i>Diaphania pyloalis</i> (Walker)	Lepidoptera	Pyralidae	ပိုးစာရွက်လိပ်	mulberry leaf roller	11	P
<i>Diaphorina citri</i> Kuwayana	Hemiptera	Psyllidae	ရှောက်စုပ်စားပိုး	citrus psyllid	2,11	P
<i>Epepeotes uncinatus</i> Gahan	Coleoptera	Cerambycidae	ပိုးစာပင်စည်ထိုးပိုး	mulberry stem borer	11	+
<i>Erionota thrax</i> (Linnaeus)	Lepidoptera	Hesperiidae	ငှက်ပျောလိပ်ပြာ	banana skipper	6	P
<i>Eudocima fullonia</i> (Clerck)	Lepidoptera	Noctuidae	သစ်သီးလိပ်ပြာ	fruit piercing moth	2,8	+

Key: 1. Mango; 2. Citrus; 3. Musk melon; 4. Guava; 5. Papaya; 6. Banana; 7. Durian; 8. Grape; 9. Cashew; 10. Apples; 11. Others.

Table 11. (cont'd) Arthropod pests of fruits

Pest	Order	Family	Myanmar common name	English common name	Plant attacked	Rating
<i>Euproctis fraterna</i> (Moore)	Lepidoptera	Lymantriidae	ရူးမွေးစုတ်	tussock moth	1,2,4,9	P
<i>Eysarcoris guttiger</i> (Thunberg)	Hemiptera	Pentatomidae	စက်ပြောက်လှိုင်း	two spotted sesame bug	1	P
<i>Ferrisia virgata</i> (Cockerell)	Hemiptera	Pseudococcidae	ဒက်ပိုးအကြား	striped mealy bug	1,2,4,10,11	+
<i>Hippotion celerio</i> (Linnaeus)	Lepidoptera	Spingidae	စပျစ်ရွက်စားရူး	grape moth	8	P
<i>Hypomeces squamosus</i> (Fabricius)	Coleoptera	Curculionidae	အစိမ်းရောင်ကျိုင်း	green weevil	1,2,8	P
<i>Idioscopus clypealis</i> (Lethierry)	Hemiptera	Cicadellidae	သရက်ဖြူတ်ပိုး	mango leafhopper	1	+
<i>Idioscopus nigroclipeatus</i> (Melichar)	Hemiptera	Cicadellidae	သရက်ဖြူတ်ပိုး	mango flower jassid	1	+
<i>Indarbela quadrinotata</i> (Walker)	Lepidoptera	Cossidae	အခေါက်ထွင်းပိုး	tree bark moth	1,2,9	P
<i>Kerria lacca</i> (Kerr)	Hemiptera	Kerriidae	နို့တ်ပိုး	lac insect	1,2,4,9,10,11	P
<i>Myzus persicae</i> (Sulzer)	Hemiptera	Aphididae	ပြေ	peach aphid	10,11	+
<i>Nephoterix piratis</i> (White)	Lepidoptera	Pyralidae	ပင်စည်ထိုးပိုး	cashew stem borer	11	+
<i>Pseudoceropepes piratis</i> (Meyrick)	Lepidoptera	Pyralidae	သီဟိုသရက်လိပ်ပြာ	cashew moth	9	+
<i>Odoiporus longicollis</i> (Olivier)	Coleoptera	Curculionidae	ငှက်ပျောပင်စည်ထိုးကျိုင်း	banana stem weevil	6	P
<i>Oecophylla smaragdina</i> (Fabricius)	Hymenoptera	Formicidae	ခါချည်ပုရွက်ဆိတ်	red tree ant	1,2,9,11	P
<i>Papilio demoleus</i> Linnaeus	Lepidoptera	Papilionidae	ရှောက်သံပုရာလိပ်ပြာ	lemon butterfly	2	+++
<i>Parlatoria ziziphus</i> (Lucas)	Hemiptera	Diaspididae	ကြေးပိုးနက်	black scale	1,2,10	+
<i>Pentalonia nigronervosa</i> Coquerel	Hemiptera	Aphididae	ပြေ	banana aphid	6	P
<i>Phyllocnistis citrella</i> Stainton	Lepidoptera	Gracillariidae	ရှောက်ရွက်ထွင်းပိုး	citrus leaf miner	2	++
<i>Phyllocoptruta oleivora</i> (Ashmead)	Acarina	Tetranychidae	မွှားပင်ကူ	citrus rust mite	2	++
<i>Planococcus pacificus</i> Cox	Hemiptera	Pseudococcidae	ဒက်ပိုး	pacific mealy bug	11	+
<i>Plocaederus obesus</i> Gahan	Coleoptera	Cerambycidae	ပင်စည်ထိုးပိုး	cashew stem borer	9	+
<i>Plocaederus pedestris</i> (White)	Coleoptera	Cerambycidae	သရက်ပင်စည်ထိုးပိုး	mango stem borer	1,9	+
<i>Pseudoceropepes piratis</i> (Meyrick)	Lepidoptera	Pyralidae	သီဟိုသရက်ဖလံ	cashew moth	9	+
<i>Pseudodendrothrips ornatiseimus</i> Schmutz	Thysanoptera	Thripidae	ပိုးစာသရစ်	mulberry thrips	11	P
<i>Raodiplosis orientalis</i> Felt	Diptera	Cecidomyiidae	သရက်ယင်	mango midge	1	P
<i>Rhytidodera simulans</i> (White)	Coleoptera	Cerambycidae	သရက်ကိုင်းထိုးပိုး	mango branch borer	1,9	+
<i>Scirtothrips dorsalis</i> Hood	Thysanoptera	Thripidae	သရစ်	chilli thrips	2	++
<i>Spodoptera litura</i> (Fabricius)	Lepidoptera	Noctuidae	ငမမြောင်တောင်	cluster caterpillar	1,6	+++
<i>Stephanitis typicus</i> (Distant)	Hemiptera	Tingidae	ငှက်ပျောစာတောင်ကျိုင်း	banana lace bug	6	P
<i>Syllepte derogata</i> (Fabricius)	Lepidoptera	Pyralidae	ဝါရွက်လိပ်ပိုး	cotton leafroller	7	+

Key: 1. Mango; 2. Citrus; 3. Musk melon; 4. Guava; 5. Papaya; 6. Banana; 7. Durian; 8. Grape; 9. Cashew; 10. Apples; 11. Others.

Table 11. (cont'd) Arthropod pests of fruits

Pest	Order	Family	Myanmar common name	English common name	Plant attacked	Rating
<i>Tessaratoma papillosa</i> (Drury)	Hemiptera	Tessaratomidae	လိုင်ချီးကျိုင်း	litchi stink bug	11	+
<i>Theretra alecto</i> (Linnaeus)	Lepidoptera	Sphingidae	စပျစ်ဖလံ	grape hawk moth	8	P
<i>Toxoptera citricidus</i> (Kirkaldy)	Hemiptera	Aphididae	ရှောက်ပြိုင်း	brown citrus aphid	2	+
<i>Toxoptera odinae</i> (Van der Goot)	Hemiptera	Aphididae	သရက်ပြိုင်း	mango aphid	1,9	+
<i>Xylotrupes gideon</i> (Linnaeus)	Coleoptera	Scarabaeidae	အုန်းကျိုင်း	coconut beetle	9	++
<i>Zeuzera coffeae</i> Nietner	Lepidoptera	Cossidae	ပင်စည်ထိုးပိုး	red branch borer	2, 11	+

Key: 1. Mango; 2. Citrus; 3. Musk melon; 4. Guava; 5. Papaya; 6. Banana; 7. Durian; 8. Grape; 9. Cashew; 10. Apples; 11. Others.

Table 12. Distribution of arthropod pests

Pest	Ayeyarwady Division	Bago	Chin State	Kachin State	Kayin State	Kayal	Magwe Division	Mandalay Division	Mon State	Rakhine State	Sagaing	Shan State (North)	Shan State (South)	Yangon Division	Tanintharyi Division
<i>Abidama producta</i>		P			P	P					+				
<i>Acanthoscelides obtectus</i>		++	P	P	P	+	+			P	+++	+		P	
<i>Achaea janata</i>		P		P	P	P	P	P	P		P				
<i>Acherontia styx</i>		P		+	P	P	+	P	P		++		P	P	
<i>Acheta</i> sp.	+	+		P	P	P	P				++	P		++	
<i>Adoretus birmanus</i>		P				P	P				++				
<i>Agrilus citri</i>		P			P	P		P							
<i>Agrotis ipsilon</i>		+	P	+	P	P	++	P	+		+		+		
<i>Agrotis segetum</i>		P	P	P		P		P		P	+		++		
<i>Alcidodes affaber</i>							+	P			P				
<i>Alcidodes frenatus</i>		P			P	P		P	P	P				P	
<i>Aleurocanthus woglumi</i>					P	P		P			+		+		
<i>Aleurodicus destructor</i>					P	P		P	P		+				
<i>Aleurodicus dispersus</i>											+				
<i>Aleurolobus barodensis</i>					P			P	P		P				
<i>Alissonotum impressicole</i>				+	P										
<i>Amplypterus panopus</i>											P				
<i>Amrasca devastans</i>		+	P			P	+++	+++			++				
<i>Amrasca</i> sp.		P					P	P			+				
<i>Amritodus atkinsoni</i>		P			P	P	++	++			+		P		
<i>Amsacta albistriga</i>		P				P					P		P	P	
<i>Amsacta lactinea</i>					P	P									
<i>Anomala antiqua</i>				P	P	P	++				++			+	
<i>Anomis flava</i>		P				P	P	P			P				

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Table 12. (cont'd) Distribution of arthropod pests

Pest	Ayeyarwady Division	Bago	Chin State	Kachin State	Kayin State	Kayal	Magwe Division	Mandalay Division	Mon State	Rakhine State	Sagaing	Shan State (North)	Shan State (South)	Yangon Division	Tanintharyi Division
<i>Anoplophora versteegii</i>		P	P	+	P	P		P		P	+		++	+	
<i>Antigastra catalaunalis</i>		+	P		P	P	++	P	P	P	+			P	
<i>Aonidiella aurantii</i>											+				
<i>Aphis craccivora</i>	+++	+		P	P	P	+++	P	P	P	++	P			
<i>Aphis fabae</i>	+++	+		P	P	P	P	P		P	+	P	++	++	+
<i>Aphis gossypii</i>	P	++		P		P	+++	+++	P	P	++		+	P	++
<i>Apomecyna histrio</i>		P		P			P								
<i>Apriona germari</i>									++						
<i>Approaerema modicella</i>	P	++	P	P	+	+	+++	++	P	P	++	P	++	+	
<i>Archips micaceanus</i>				P	+	P	P	P			+	P	P		
<i>Ariadne merione</i>					P	P	P	P			+				
<i>Aristobia approximata</i>											+		+++		
<i>Artona catoxantha</i>					P	P					P				
<i>Aspidiotus destructor</i>		P			P	P					+				
<i>Aspidomorpha indica</i>								P			+			P	
<i>Athalia lugens</i>							++		P		P		P		
<i>Atherigona soccata</i>								+			+				
<i>Atractomorpha crenulata</i>						P		P			++				
<i>Attacus atlas</i>								P			+			P	
<i>Aulacaspis tubercularis</i>		P		P			+	P			+				
<i>Aulacophora foveicollis</i>	P	P		P		P	+	P	+	P	P		P	P	+
<i>Aularches miliaris</i>		P			P	P					+			P	
<i>Bactrocera cucurbitae</i>		P	P	+	P	P	++	P	P	P	++		++	+	+
<i>Bactrocera dorsalis</i>	P	+	+	+			+		+	P	++		+++	+	+++
<i>Bagrada hilaris</i>		P				P	+	P			P		P		
<i>Batocera rufomaculata</i>		P		+	+	+			P	P	+		++	P	

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Table 12. (cont'd) Distribution of arthropod pests

Pest	Ayeyarwady Division	Bago	Chin State	Kachin State	Kayin State	Kayal	Magwe Division	Mandalay Division	Mon State	Rakhine State	Sagaing	Shan State (North)	Shan State (South)	Yangon Division	Tanintharyi Division
<i>Bemisia</i> sp.		P					P				+				
<i>Bemisia tabaci</i>					P	P	+	P			+		P		
<i>Brachytrupes</i> sp.					P	P			P		P				
<i>Brevennia rehi</i>					P	P					P				
<i>Brevicoryne brassicae</i>		++		P			++	++	P		+				
<i>Caliothrips indicus</i>		P			P	P	+	P			P			P	
<i>Callitettix versicolor</i>					P			P			P				
<i>Callosobruchus</i> sp.		P		P	P	+	++		P	P	++	P	++		+
<i>Carpomyia vesuviana</i>				+				++		P	+				
<i>Ceratovacuna lanigera</i>					P	P	+	P			P		P		
<i>Ceroplastes ceriferus</i>		P					P				+				
<i>Chilo auricilius</i>					P	P	P	P	P		++			P	
<i>Chilo infuscatellus</i>					P	P		P			+				
<i>Chilo polychrysus</i>			P	P	P	P					++	+			
<i>Chilo</i> spp.		P					+				+			P	
<i>Chilo suppressalis</i>				P	P	P	+	P		P	++				
<i>Chilo tumidicostalis</i>		P	P		P	P					+				
<i>Chrysomphalus aonidum</i>					P	P				P	P				
<i>Cnaphalocrocis medinalis</i>	P	++	P	P	P	P	+	P	++	P	++	P	P	+++	
<i>Condica capensis</i>				P	P		P	P			P				
<i>Coptotermes curvignathus</i>		P		P	P	P			+		+				
<i>Coridius fuscus</i>		P				P				P	P			+	
<i>Cosmopolites sordidus</i>		P	+	+	P	P		P	P		P				
<i>Cricula trifenestrata</i>	++	+			P	P		P	+	P	+		P	+	
<i>Crocidolomia pavonana</i>				P		P	P			P	+				
<i>Cylas formicarius</i>		P						P	P		P			P	

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Table 12. (cont'd) Distribution of arthropod pests

Pest	Ayeyarwady Division	Bago	Chin State	Kachin State	Kayin State	Kayal	Magwe Division	Mandalay Division	Mon State	Rakhine State	Sagaing	Shan State (North)	Shan State (South)	Yangon Division	Tanintharyi Division
<i>Cyrtopeltis tenuis</i>											P				
<i>Deporaus marginatus</i>				+	+	P					P		P		
<i>Diaphania indica</i>		P		P		P									
<i>Diaphania pyloalis</i>					P			P							
<i>Diaphorina citri</i>				P	P	P					P		+		
<i>Dicladispa armigera</i>	+	+		P	P	P	+	+	++	P	++	P	+	+++	+++
<i>Dorylus orientalis</i>				P							++		P		
<i>Dysdercus cingulatus</i>		++				P	+++	P			+		P		
<i>Earias insulana</i>		++					+	+++			+		+		
<i>Earias vittella</i>							++	+++			+++				
<i>Elasmolomus sordidus</i>		P			P	P	+				+			+	
<i>Empoasca flavescens</i>	P	P		P	P	P	+				++	P		P	
<i>Empoasca</i> sp.		+			P	P	++	++			+			P	
<i>Epepeotes uncinatus</i>			+					+							
<i>Epilachna indica</i>		P	P	P										P	
<i>Epilachna 28-punctata</i>		P											++		
<i>Epilachna pusillanima</i>		P				P		+			+				
<i>Epilachna</i> sp.		P		P	P						P		P		
<i>Epilachna vigintioctopunctata</i>		P				P		+			+				
<i>Erionota thrax</i>					P	P	P		P		P				
<i>Etiella zinckenella</i>	+	P	P	+	+	+	P	+		P	+		+	++	
<i>Eublemma olivacea</i>	P	P		P		P	P	P		P	+		P	P	
<i>Euchrysops cnejus</i>		P		P	P	P			P		+	P		+	
<i>Eudocima fullonia</i>					P			P			+				
<i>Euproctis fraterna</i>		P									P				
<i>Eurydema pulchrum</i>											P				

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Table 12. (cont'd) Distribution of arthropod pests

Pest	Ayeyarwady Division	Bago	Chin State	Kachin State	Kayin State	Kayal	Magwe Division	Mandalay Division	Mon State	Rakhine State	Sagaing	Shan State (North)	Shan State (South)	Yangon Division	Tanintharyi Division
<i>Euscirtus concinnus</i>	P	P		P	P	P	P				P			+	
<i>Exelastis atomosa</i>					P	P		P			P				
<i>Eysarcoris guttiger</i>					P	P					P			P	
<i>Ferrisia virgata</i>	P	P	P						P				P		
<i>Frankliniella</i> sp.		P					P	P			P				
<i>Gryllotalpa orientalis</i>		P		P	P	P	P		P	P	+		P	P	
<i>Helicoverpa armigera</i>	+	++	P	+	P	P	+++	+++	+		+++	P	+++	+	++
<i>Helicoverpa assulta</i>		P						+			++				
<i>Hellula undalis</i>		+				P					++		P		
<i>Heteroderes lenis</i>				P	P	P	+	+			P				
<i>Hippotion celerio</i>															
<i>Holotrichia</i> sp.	+	P		P	P	P	++	P			++		+	++	
<i>Hypolixus pica</i>					P	P					+				
<i>Hypomeces squamosus</i>					P	P		P			P			P	
<i>Idioscopus clypealis</i>		P			P	P	+	++			+				
<i>Idioscopus nigroclypeatus</i>					P	P		++			+				
<i>Indarbela quadrinotata</i>	P										+				
<i>Kerria lacca</i>				+				+							
<i>Kiritshenkella sacchari</i>				P	P	P	+	P	P					P	
<i>Lampides boeticus</i>		P			P	P					P		P	P	
<i>Leptocorisa acuta</i>	P	++		++	P	P	++	P	+	P	++	P	P	+	
<i>Leptocorisa oratorius</i>	P	++		++	P	P		P	+	P	++	P			
<i>Leucinodes orbonalis</i>		P	P				P	+	P				++	P	
<i>Lipaphis erysimi</i>		++	P			P	P	++			+		+		
<i>Macrotermes</i> spp.		P	P	P	P	P	++	P			++		P	P	
<i>Marasmia trapezalis</i>											P				

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Table 12. (cont'd) Distribution of arthropod pests

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<i>Maruca vitrata</i>		++		P	P	P	+	+++			+		+	+	+
<i>Medythia suturalis</i>		P		P	P	P		P			P		P		
<i>Melanagromyza obtusa</i>				P	P	P		P		P	P	P	+		
<i>Melanaphis sacchari</i>						P					P				
<i>Melanitis ismene</i>	P			P	P	P	P		P		P	P	P	P	
<i>Mylabris pustulata</i>					P	P	+	P				P			
<i>Mythimna separata</i>	+	+	P	+	P	P	++	+	+		++	+	+	+	
<i>Mythimna sp.</i>		P									+				
<i>Myzus persicae</i>		P	P			P	+				+		+	P	
<i>Nephoterix piratis</i>									+						
<i>Nephotettix virescens</i>		+		P	+	P	++	+	P		+	P	P	P	
<i>Nezara viridula</i>		P		P	P	P	++	P			P	P	P	P	
<i>Nilaparvata lugens</i>	++	+	P	P	P	P	+	++			++		P	++	
<i>Odoiporus longicollis</i>		P	+	P	P			P	+		+			P	
<i>Odontotermes sp.</i>		P		P	P	P	+	P			++	+	+	+	
<i>Oecophylla smaragdina</i>	P	P		P		P			P		+		P	P	
<i>Omiodes indicata</i>				P	P	P	P	P	P	P	+	+			
<i>Ophiomyia phaseoli</i>	P	+		P	P	P	++		+			+	P	+	
<i>Opisina arenosella</i>					P	P	P		+		P				
<i>Orgyia turbata</i>		P	P	P	+	+	+	P		P	+			+	
<i>Orosius orientalis</i>			P	P	P	P	++	P			+			P	
<i>Orseolia andropoginis</i>						P		P			P				
<i>Orseolia oryzae</i>	+	++		++	P	+		P		P	+	+++	+	+	
<i>Oryctes rhinoceros</i>		P			P	P	P		P	P	P				
<i>Ostrinia furnacalis</i>		P	P				++		P	P	+			P	
<i>Oxya hyla</i>	P	P		P	P	P			P		P	P	P		

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<i>Papilio demoleus</i>	P	P		P	P		++	++	P	P	P		P	+	
<i>Paratonyx stagnalis</i>	+++	++	P	+	+	P	+	P	+++	P	P	++	P	+++	++
<i>Parasa lepida</i>						P	P				P				
<i>Parlatoria ziziphus</i>													++		
<i>Parnara guttatus</i>	P		P	P	P	P		P	P	P	P	P		P	
<i>Pectinophora gossypiella</i>		++				P	++	+++			++	P	P		
<i>Pelopidas mathias</i>	P	P		P	P	P	P	P	P	P	P		P		
<i>Pentalonia nigronervosa</i>		P						P		P	+				
<i>Phodoryctis caerulea</i>		P		P	P	P					P		+	P	
<i>Phthorimaea operculella</i>				P		P	P	P			P		++		
<i>Phycita infusella</i>		P				P		P			P				
<i>Phyllocnistis citrella</i>	P	P		+	P	P	+	++		P	+		+++	+	
<i>Phyllocoptruta oleivora</i>		P							P		+		+++		
<i>Phyllotreta</i> sp.								P			P				
<i>Phyllotreta striolata</i>		P					P	P			P		P		
<i>Pieris canidia</i>				+		P	P	++	P		P		+		
<i>Pieris rapae</i>						P	P	++		P					
<i>Planococcus pacificus</i>									+		+		+++		
<i>Plocaederus obesus</i>	P									P	+				
<i>Plocaederus pedestris</i>		P	+		+	+	+	++							
<i>Plutella xylostella</i>		+++		P		+	++	+++		P	++			P	
<i>Polyphagotarsonemus latus</i>		+		P	P	P	P				P		+++	P	
<i>Potamon dayanum</i>	P			P	P	P			P		P		P		
<i>Psalis pennatulata</i>	P	P		P	P	P	P		P		+	+	P	P	
<i>Pseudococcus</i> sp.						P	+	P			P				
<i>Pseudodendrothrips ornatissimus</i>			P			P		P							

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<i>Pyrilla perpusilla</i>		P			P	P					P				
<i>Raodiplosis orientalis</i>					P					P	P				
<i>Recilia dorsalis</i>				P	P	P	P	+			++				
<i>Rhopalosiphum maidis</i>		P				P	P		P		P			P	
<i>Rhynchophorus ferrugineus</i>		P			+	P					P				
<i>Rhytidodera simulans</i>	P	P						++	+	P	+		+	+	
<i>Scirpophaga excerptalis</i>		+		P	P	P	+	P	P		+				
<i>Scirpophaga incertulus</i>	++	++	P	+	P	+	+++	+++	+++	P	++	+	++	+	++
<i>Scirpophaga magnella</i>		+		P	P			P							
<i>Scirtothrips dorsalis</i>		P			P	P	P	++			+		++		
<i>Scotinophara</i> sp.	P				P	P					P				
<i>Sesamia inferens</i>		P	P	+	P	P	P	P			+		P		
<i>Sogatella furcifera</i>	+	+			P	P	++	++	++		++		++	++	
<i>Sphenarches caffer</i>					P	P	+				P		P		
<i>Sphenoptera ghoshi</i>		P			P	P					+				
<i>Spilarctia obliqua</i>	P	+	P	P	+	P	P	P	P	P	+	+	P	P	
<i>Spodoptera litura</i>	++	++	+	+	P	P	+	P	+		++	P	+	+++	++
<i>Spodoptera mauritia</i>	+	+	P	+	P	P		P		P	++	P	+	+++	
<i>Stenachroia elongella</i>							+		+		P				
<i>Stenchaetothrips biformis</i>	+	P		P	P	P			P		P			P	
<i>Stephanitis typicus</i>				P	P	P		P			+			P	
<i>Syllepte derogata</i>		P					+				+		P		
<i>Taeniothrips</i> sp.		P									P			P	
<i>Tarbinskiellus portentosus</i>		+		P	P	P	+	P	P		P			+	
<i>Tesseratoma papillosa</i>									P			P	+		
<i>Tetranychus</i> spp.	P	+		P			+	+			+				

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<i>Theretra alecto</i>								P							
<i>Thrips flavus</i>		P				P					P				
<i>Thrips palmi</i>		P						P			P				
<i>Thrips tabaci</i>		P				P		++			+		++		
<i>Thysanoplusia orichalcea</i>		P		P	P	P	P		P		+		P	P	
<i>Toxoptera citricidus</i>		P	P	P	P			P			+		P	P	
<i>Toxoptera odinae</i>		P		P	P	P		++			P			P	
<i>Trabala vishnou</i>					P		P				+				
<i>Trialeurodes ricini</i>							P				P				
<i>Trichoplusia ni</i>	P	++		P		P		++	P	P	P		P	P	
<i>Trochorrhopalus sacchari</i>					P	P					P			P	
<i>Urentius hystericellus</i>				P							P				
<i>Varuna litterata</i>	+				P				P	P				+	
<i>Xylotrupes gideon</i>		P		P	+	P		P		P	+		P		
<i>Zeuzera coffeae</i>					P				P					P	

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Table 13. Relative importance of major arthropod pests of agriculture

Pest	Family	2 Rice	3 Pulses	4 Oil	5 Sugar	6 Cotton	7 Maize	8 Cruc.	9 Sol.	10 Cucu	11 Fruit	Total	Order
<i>Abidama producta</i> (Walker)	Cercopidae				P								
<i>Acanthoscelides obtectus</i> (Say)	Bruchidae		2									2	
<i>Achaea janata</i> (Linnaeus)	Noctuidae			P									
<i>Acherontia styx</i> (Westwood)	Sphingidae			P					1			1	
<i>Acheta</i> sp.	Gryllidae		4									4	19 =
<i>Adoretus birmanus</i> Arrow	Scarabaeidae						P						
<i>Agrilus citri</i> Thery	Buprestidae										1	1	
<i>Agrotis ipsilon</i> (Hufnagel)	Noctuidae		4			1	2	2	2			11	3
<i>Agrotis segetum</i> (Denis and Schiffermuller)	Noctuidae						2	3	2			7	8 =
<i>Alcidodes affaber</i> (Aurivillius)	Curculionidae					P							
<i>Alcidodes frenatus</i> (Faust)	Curculionidae										1	1	
<i>Aleurocanthus woglumi</i> Ashby	Aleyrodidae										1	1	
<i>Aleurodicus destructor</i> Mackie	Aleyrodidae		P										
<i>Aleurodicus dispersus</i> Russell	Aleyrodidae										2	2	
<i>Aleurolobus barodensis</i> (Maskell)	Aleyrodidae				P								
<i>Alissonotum impressicole</i> Arrow	Scarabaeidae				1							1	
<i>Amplypterus panopus</i> (Cramer)	Sphingidae										P		
<i>Amrasca devastans</i> (Distant)	Cicadellidae					1						1	
<i>Amrasca</i> sp.	Cicadellidae						1		1			2	
<i>Amritodus atkinsoni</i> (Lethierry)	Cicadellidae										1	1	
<i>Amsacta albistriga</i> (Walker)	Arctiidae						2					2	
<i>Amsacta lactinea</i> (Cramer)	Arctiidae			P									
<i>Anomala antiqua</i> (Gyllenhal)	Scarabaeidae			2	1							3	30 =
<i>Anomis flava</i> (Fabricius)	Noctuidae					P							
<i>Anoplophora versteegii</i> (Ritsema)	Cerambycidae										1	1	
<i>Antigastra catalaunalis</i> (Duponchel)	Pyralidae			1								1	
<i>Aonidiella aurantii</i> (Maskell)	Diaspididae										P		
<i>Aphis craccivora</i> Koch	Aphididae		3	1								4	19 =

Table 13. (cont'd) Relative importance of major arthropod pests of agriculture

Pest	Family	2 Rice	3 Pulses	4 Oil	5 Sugar	6 Cotton	7 Maize	8 Cruc.	9 Sol.	10 Cucu	11 Fruit	Total	Order
<i>Aphis fabae</i> (Scopoli)	Aphididae		4									4	19 =
<i>Aphis gossypii</i> Glover	Aphididae					1			2	3	2	8	6 =
<i>Apomecyna histrio</i> (Fabricius)	Cerambycidae									4		4	19 =
<i>Apriona germari</i> (Hope)	Cerambycidae										1	1	
<i>Aproaerema modicella</i> (Deventer)	Gelechiidae		3	1								4	19 =
<i>Archips micaceanus</i> (Walker)	Tortricidae		2	P								2	
<i>Ariadne merione</i> (Cramer)	Nymphalidae			P									
<i>Aristobia approximator</i> (Thomson)	Cerambycidae										1	1	
<i>Artona catoxantha</i> (Hampson)	Zygaenidae			P									
<i>Aspidiotus destructor</i> Signoret	Diaspididae			P									
<i>Aspidomorpha indica</i> Boheman	Chrysomelidae								P				
<i>Athalia lugens</i> (Klug)	Tenthredinidae							3				3	30 =
<i>Atherigona soccata</i> Rondani	Muscidae						1					1	
<i>Atractomorpha crenulata</i> (Fabricius)	Pyrgomorphidae								P				
<i>Attacus atlas</i> (Linnaeus)	Saturniidae										P		
<i>Aulacaspis tubercularis</i> Newstead	Diaspididae										1	1	
<i>Aulacophora foveicollis</i> (Lucas)	Chrysomelidae									4		4	19 =
<i>Aularches miliaris</i> (Linnaeus)	Pyrgomorphidae			P							1	1	
<i>Bactrocera cucurbitae</i> (Coquillett)	Tephritidae								1	5	1	7	8 =
<i>Bactrocera dorsalis</i> (Hendel)	Tephritidae								3		4	7	8 =
<i>Bagrada hilaris</i> (Burmeister)	Pentatomidae							3	2			5	13 =
<i>Batocera rufomaculata</i> (De Geer)	Cerambycidae										2	2	
<i>Bemisia</i> sp.	Aleyrodidae										3	3	30 =
<i>Bemisia tabaci</i> (Gennadius)	Aleyrodidae			1		1			2			4	19 =
<i>Brachytrupes</i> sp.	Gryllidae			P									
<i>Brevennia rehi</i> (Lindinger)	Pseudococcidae	P											
<i>Brevicoryne brassicae</i> (Linnaeus)	Aphididae							2				2	
<i>Caliothrips indicus</i> (Bagnall)	Thripidae			1								1	
<i>Callitettix versicolor</i> (Fabricius)	Cercopidae				P								
<i>Callosobruchus</i> sp.	Bruchidae		3									3	30 =

Table 13. (cont'd) Relative importance of major arthropod pests of agriculture

Pest	Family	2 Rice	3 Pulses	4 Oil	5 Sugar	6 Cotton	7 Maize	8 Cruc.	9 Sol.	10 Cucu	11 Fruit	Total	Order
<i>Carpomyia vesuviana</i> Costa	Tephritidae										P		
<i>Ceratovacuna lanigera</i> (Zehntner)	Aphididae				P								
<i>Ceroplastes ceriferus</i> (Fabricius)	Coccidae										P		
<i>Chilo auricilius</i> (Dudgeon)	Pyralidae				1							1	
<i>Chilo infuscatellus</i> Snellen	Pyralidae				1							1	
<i>Chilo polychrysus</i> (Meyrick)	Pyralidae	1										1	
<i>Chilo</i> sp.	Pyralidae						1					1	
<i>Chilo suppressalis</i> (Walker)	Pyralidae	1			1		1					3	30 =
<i>Chilo tumidicostalis</i> (Hampson)	Pyralidae				1							1	
<i>Chrysomphalus aonidum</i> (Linnaeus)	Diaspididae			P							3	3	30 =
<i>Cnaphalocrocis medinalis</i> (Guenee)	Pyralidae	1										1	
<i>Condica capensis</i> Guenee	Noctuidae			P									
<i>Coptotermes curvignathus</i> Holmgren	Rhinotermitidae			3								3	30 =
<i>Coridius fuscus</i> (Westwood)	Dinidoridae									P			
<i>Cosmopolites sordidus</i> (Germar)	Curculionidae										1	1	
<i>Cricula trifenestrata</i> (Helfer)	Saturniidae										3	3	30 =
<i>Crocidolomia pavonana</i> (Fabricius)	Pyralidae							3				3	30 =
<i>Cylas formicarius</i> (Fabricius)	Apionidae								P				
<i>Cyrtopeltis tenuis</i> (Reuter)	Miridae								P				
<i>Deporaus marginatus</i> (Pascoe)	Curculionidae										P		
<i>Diaphania indica</i> (Saunders)	Pyralidae									P			
<i>Diaphania pyloalis</i> (Walker)	Pyralidae										P		
<i>Diaphorina citri</i> Kuwayama	Psyllidae										P		
<i>Dicladispa armigera</i> (Olivier)	Chrysomelidae	1										1	
<i>Dorylus orientalis</i> Westwood	Formicidae							P					
<i>Dysdercus cingulatus</i> (Fabricius)	Pyrrhocoridae					1						1	
<i>Earias insulana</i> (Boisduval)	Noctuidae					1						1	
<i>Earias vittella</i> (Fabricius)	Noctuidae					1						1	
<i>Elasmolomus sordidus</i> (Fabricius)	Lygaeidae			1								1	
<i>Empoasca flavescens</i> (Fabricius)	Cicadellidae		1					P				1	

Table 12. (cont'd) Distribution of arthropod pests

Pest	Ayeyarwady Division	Bago	Chin State	Kachin State	Kayin State	Kayal	Magwe Division	Mandalay Division	Mon State	Rakhine State	Sagaing	Shan State (North)	Shan State (South)	Yangon Division	Tanintharyi Division
<i>Pyrilla perpusilla</i>		P			P	P					P				
<i>Raodiplosis orientalis</i>					P					P	P				
<i>Recilia dorsalis</i>				P	P	P	P	+			++				
<i>Rhopalosiphum maidis</i>		P				P	P		P		P			P	
<i>Rhynchophorus ferrugineus</i>		P			+	P					P				
<i>Rhytidodera simulans</i>	P	P						++	+	P	+		+	+	
<i>Scirpophaga excerptalis</i>		+		P	P	P	+	P	P		+				
<i>Scirpophaga incertulus</i>	++	++	P	+	P	+	+++	+++	+++	P	++	+	++	+	++
<i>Scirpophaga magnella</i>		+		P	P			P							
<i>Scirtothrips dorsalis</i>		P			P	P	P	++			+		++		
<i>Scotinophara</i> sp.	P				P	P					P				
<i>Sesamia inferens</i>		P	P	+	P	P	P	P			+		P		
<i>Sogatella furcifera</i>	+	+			P	P	++	++	++		++		++	++	
<i>Sphenarches caffer</i>					P	P	+				P		P		
<i>Sphenoptera ghoshi</i>		P			P	P					+				
<i>Spilarctia obliqua</i>	P	+	P	P	+	P	P	P	P	P	+	+	P	P	
<i>Spodoptera litura</i>	++	++	+	+	P	P	+	P	+		++	P	+	+++	++
<i>Spodoptera mauritia</i>	+	+	P	+	P	P		P		P	++	P	+	+++	
<i>Stenachroia elongella</i>							+		+		P				
<i>Stenchaetothrips biformis</i>	+	P		P	P	P			P		P			P	
<i>Stephanitis typicus</i>				P	P	P		P			+			P	
<i>Syllepte derogata</i>		P					+				+		P		
<i>Taeniothrips</i> sp.		P									P			P	
<i>Tarbinskiellus portentosus</i>		+		P	P	P	+	P	P		P			+	
<i>Tesseratoma papillosa</i>									P			P	+		
<i>Tetranychus</i> spp.	P	+		P			+	+			+				

+++ = very widespread and very important; ++ = widespread and important; + = important locally; P = present but not important

Table 12. (cont'd) Distribution of arthropod pests

Pest	Ayeyarwady Division	Bago	Chin State	Kachin State	Kayin State	Kayal	Magwe Division	Mandalay Division	Mon State	Rakhine State	Sagaing	Shan State (North)	Shan State (South)	Yangon Division	Tanintharyi Division
<i>Theretra alecto</i>								P							
<i>Thrips flavus</i>		P				P					P				
<i>Thrips palmi</i>		P						P			P				
<i>Thrips tabaci</i>		P				P		++			+		++		
<i>Thysanoplusia orichalcea</i>		P		P	P	P	P		P		+		P	P	
<i>Toxoptera citricidus</i>		P	P	P	P			P			+		P	P	
<i>Toxoptera odinae</i>		P		P	P	P		++			P			P	
<i>Trabala vishnou</i>					P		P				+				
<i>Trialeurodes ricini</i>							P				P				
<i>Trichoplusia ni</i>	P	++		P		P		++	P	P	P		P	P	
<i>Trochorrhopalus sacchari</i>					P	P					P			P	
<i>Urentius hystericellus</i>				P							P				
<i>Varuna litterata</i>	+				P				P	P				+	
<i>Xylotrupes gideon</i>		P		P	+	P		P		P	+		P		
<i>Zeuzera coffeae</i>					P				P					P	

+++ = very widespread and very important; ++ = widespread and important; + = important locally; P = present but not important

Table 13. Relative importance of major arthropod pests of agriculture

Pest	Family	2 Rice	3 Pulses	4 Oil	5 Sugar	6 Cotton	7 Maize	8 Cruc.	9 Sol.	10 Cucu	11 Fruit	Total	Order
<i>Abidama producta</i> (Walker)	Cercopidae				P								
<i>Acanthoscelides obtectus</i> (Say)	Bruchidae		2									2	
<i>Achaea janata</i> (Linnaeus)	Noctuidae			P									
<i>Acherontia styx</i> (Westwood)	Sphingidae			P					1			1	
<i>Acheta</i> sp.	Gryllidae		4									4	19 =
<i>Adoretus birmanus</i> Arrow	Scarabaeidae						P						
<i>Agrilus citri</i> Thery	Buprestidae										1	1	
<i>Agrotis ipsilon</i> (Hufnagel)	Noctuidae		4			1	2	2	2			11	3
<i>Agrotis segetum</i> (Denis and Schiffermuller)	Noctuidae						2	3	2			7	8 =
<i>Alcidodes affaber</i> (Aurivillius)	Curculionidae					P							
<i>Alcidodes frenatus</i> (Faust)	Curculionidae										1	1	
<i>Aleurocanthus woglumi</i> Ashby	Aleyrodidae										1	1	
<i>Aleurodicus destructor</i> Mackie	Aleyrodidae		P										
<i>Aleurodicus dispersus</i> Russell	Aleyrodidae										2	2	
<i>Aleurolobus barodensis</i> (Maskell)	Aleyrodidae				P								
<i>Alissonotum impressicole</i> Arrow	Scarabaeidae				1							1	
<i>Amplypterus panopus</i> (Cramer)	Sphingidae										P		
<i>Amrasca devastans</i> (Distant)	Cicadellidae					1						1	
<i>Amrasca</i> sp.	Cicadellidae						1		1			2	
<i>Amritodus atkinsoni</i> (Lethierry)	Cicadellidae										1	1	
<i>Amsacta albistriga</i> (Walker)	Arctiidae						2					2	
<i>Amsacta lactinea</i> (Cramer)	Arctiidae			P									
<i>Anomala antiqua</i> (Gyllenhal)	Scarabaeidae			2	1							3	30 =
<i>Anomis flava</i> (Fabricius)	Noctuidae					P							
<i>Anoplophora versteegii</i> (Ritsema)	Cerambycidae										1	1	
<i>Antigastra catalaunalis</i> (Duponchel)	Pyralidae			1								1	
<i>Aonidiella aurantii</i> (Maskell)	Diaspididae										P		
<i>Aphis craccivora</i> Koch	Aphididae		3	1								4	19 =

Table 13. (cont'd) Relative importance of major arthropod pests of agriculture

Pest	Family	2 Rice	3 Pulses	4 Oil	5 Sugar	6 Cotton	7 Maize	8 Cruc.	9 Sol.	10 Cucu	11 Fruit	Total	Order
<i>Aphis fabae</i> (Scopoli)	Aphididae		4									4	19 =
<i>Aphis gossypii</i> Glover	Aphididae					1			2	3	2	8	6 =
<i>Apomecyna histrio</i> (Fabricius)	Cerambycidae									4		4	19 =
<i>Apriona germari</i> (Hope)	Cerambycidae										1	1	
<i>Aproaerema modicella</i> (Deventer)	Gelechiidae		3	1								4	19 =
<i>Archips micaceanus</i> (Walker)	Tortricidae		2	P								2	
<i>Ariadne merione</i> (Cramer)	Nymphalidae			P									
<i>Aristobia approximator</i> (Thomson)	Cerambycidae										1	1	
<i>Artona catoxantha</i> (Hampson)	Zygaenidae			P									
<i>Aspidiotus destructor</i> Signoret	Diaspididae			P									
<i>Aspidomorpha indica</i> Boheman	Chrysomelidae								P				
<i>Athalia lugens</i> (Klug)	Tenthredinidae							3				3	30 =
<i>Atherigona soccata</i> Rondani	Muscidae						1					1	
<i>Atractomorpha crenulata</i> (Fabricius)	Pyrgomorphidae								P				
<i>Attacus atlas</i> (Linnaeus)	Saturniidae										P		
<i>Aulacaspis tubercularis</i> Newstead	Diaspididae										1	1	
<i>Aulacophora foveicollis</i> (Lucas)	Chrysomelidae									4		4	19 =
<i>Aularches miliaris</i> (Linnaeus)	Pyrgomorphidae			P							1	1	
<i>Bactrocera cucurbitae</i> (Coquillett)	Tephritidae								1	5	1	7	8 =
<i>Bactrocera dorsalis</i> (Hendel)	Tephritidae								3		4	7	8 =
<i>Bagrada hilaris</i> (Burmeister)	Pentatomidae							3	2			5	13 =
<i>Batocera rufomaculata</i> (De Geer)	Cerambycidae										2	2	
<i>Bemisia</i> sp.	Aleyrodidae										3	3	30 =
<i>Bemisia tabaci</i> (Gennadius)	Aleyrodidae			1		1			2			4	19 =
<i>Brachytrupes</i> sp.	Gryllidae			P									
<i>Brevennia rehi</i> (Lindinger)	Pseudococcidae	P											
<i>Brevicoryne brassicae</i> (Linnaeus)	Aphididae							2				2	
<i>Caliothrips indicus</i> (Bagnall)	Thripidae			1								1	
<i>Callitettix versicolor</i> (Fabricius)	Cercopidae				P								
<i>Callosobruchus</i> sp.	Bruchidae		3									3	30 =

Table 13. (cont'd) Relative importance of major arthropod pests of agriculture

Pest	Family	2 Rice	3 Pulses	4 Oil	5 Sugar	6 Cotton	7 Maize	8 Cruc.	9 Sol.	10 Cucu	11 Fruit	Total	Order
<i>Carpomyia vesuviana</i> Costa	Tephritidae										P		
<i>Ceratovacuna lanigera</i> (Zehntner)	Aphididae				P								
<i>Ceroplastes ceriferus</i> (Fabricius)	Coccidae										P		
<i>Chilo auricilius</i> (Dudgeon)	Pyralidae				1							1	
<i>Chilo infuscatellus</i> Snellen	Pyralidae				1							1	
<i>Chilo polychrysus</i> (Meyrick)	Pyralidae	1										1	
<i>Chilo</i> sp.	Pyralidae						1					1	
<i>Chilo suppressalis</i> (Walker)	Pyralidae	1			1		1					3	30 =
<i>Chilo tumidicostalis</i> (Hampson)	Pyralidae				1							1	
<i>Chrysomphalus aonidum</i> (Linnaeus)	Diaspididae			P							3	3	30 =
<i>Cnaphalocrocis medinalis</i> (Guenee)	Pyralidae	1										1	
<i>Condica capensis</i> Guenee	Noctuidae			P									
<i>Coptotermes curvignathus</i> Holmgren	Rhinotermitidae			3								3	30 =
<i>Coridius fuscus</i> (Westwood)	Dinidoridae									P			
<i>Cosmopolites sordidus</i> (Germar)	Curculionidae										1	1	
<i>Cricula trifenestrata</i> (Helfer)	Saturniidae										3	3	30 =
<i>Crocidolomia pavonana</i> (Fabricius)	Pyralidae							3				3	30 =
<i>Cylas formicarius</i> (Fabricius)	Apionidae								P				
<i>Cyrtopeltis tenuis</i> (Reuter)	Miridae								P				
<i>Deporaus marginatus</i> (Pascoe)	Curculionidae										P		
<i>Diaphania indica</i> (Saunders)	Pyralidae									P			
<i>Diaphania pyloalis</i> (Walker)	Pyralidae										P		
<i>Diaphorina citri</i> Kuwayama	Psyllidae										P		
<i>Dicladispa armigera</i> (Olivier)	Chrysomelidae	1										1	
<i>Dorylus orientalis</i> Westwood	Formicidae							P					
<i>Dysdercus cingulatus</i> (Fabricius)	Pyrrhocoridae					1						1	
<i>Earias insulana</i> (Boisduval)	Noctuidae					1						1	
<i>Earias vittella</i> (Fabricius)	Noctuidae					1						1	
<i>Elasmolomus sordidus</i> (Fabricius)	Lygaeidae			1								1	
<i>Empoasca flavescens</i> (Fabricius)	Cicadellidae		1					P				1	

Table 14 Ranking of arthropod pests scoring 3+ or more

In this table, the rating (total number of +s) for each species (derived from Table 13) is used to arrange the 46 highest scoring (3+ or more) arthropod pests in decreasing order of importance. This is probably the best single measure of overall importance and can be used to help in establishing priorities for attempts at control. However, careful consideration should also be given to the 23 pests scoring 2+ in a single crop only, since this indicates that they are widespread and important in their particular crop. For example, the exotic diamondback moth *Plutella xylostella* is rated 2+ for crucifers (its only rating). It is undoubtedly sufficiently important for crucifers to be considered very seriously as a target for a biological control project.

This is because of successful biological control of this pest in a number of countries, including some in Southeast Asia. Another very important factor that should be taken into account is the value of the crop, or crops, affected by the pest. Relevant information is provided in Table 19, giving area and production figures for various crops in Myanmar. In this context, however, it is necessary not to underestimate the importance of the crop to the homegrower and consumer and omit that value, an aspect that is generally poorly recognised, if at all, in official statistics.

ဇယား (၁၄) အဆင့် ၃+ နှင့်အထက် အင်းဆက်ဖျက်ပိုးများ သတ်မှတ်ခြင်း

ဤဇယားသည် အင်းဆက်မျိုးစိပ် တစ်ခုချင်းအလိုက် အရေးပါပုံကို စုစုပေါင်း (+) လက္ခဏာများဖြင့် ခွဲခြားသတ်မှတ်ရာ ဇယား (၁၃) အပေါ် အခြေခံ၍ အင်းဆက်မျိုးစိပ် (၄၆) ခုအနက် အဆင့် ၃+ နှင့် အထက် ရရှိသည့် အင်းဆက်မျိုးစိပ်များကို ခွဲထုတ်၍ အရေးကြီးမှုအဆင့်အရ များရာမှနည်းရာသို့ စဉ်ထားပါသည်။ မည်သည့်အင်းဆက်ဖျက်ပိုးများကို ဦးစားပေးကာကွယ်နှိမ်နင်းသင့်သည်ကို စိစစ်ရွေးချယ်ရာ၌ မြေပြင်၍တိုင်းတာနိုင်သည့် အကောင်းဆုံးနည်းဖြစ်နိုင်ပါသည်။ သို့သော် သီးနှံတစ်ခုတည်းတွင် ကျရောက်၍ အဆင့် ၂+ ရှိသည့် အင်းဆက်မျိုးစိပ် (၂၃) ခုကိုလည်း စဉ်းစားရန် လိုအပ်ပါသည်။ ဤသီးနှံတွင် ပျံ့နှံ့စွာအရေးပါပုံရှိကြောင်းပြသနေခြင်းကြောင့် ဖြစ်ပါသည်။ ဥပမာ-ဂေါ်ဖိစိန်ကွက်ဖလံသည် မုံညင်း၊ ဂေါ်ဖိသီးနှံတွင် အဆင့် ၂+ သတ်မှတ်ထားခြင်း ဖြစ်ပါသည်။ ထို့ကြောင့် ဂေါ်ဖိမုံညင်း မျိုးနွယ်ဝင် သီးနှံများအတွက် ဇီဝကာကွယ်နှိမ်နင်းရေးစီမံကိန်း ချမှတ်ဆောင်ရွက်သင့်ပါသည်။ ဤအင်းဆက်ဖျက်ပိုးကို တိုင်းပြည်များစွာနှင့် အရှေ့တောင်အာရှတိုင်းပြည်များတွင် ဇီဝနည်းဖြင့် အောင်မြင်စွာ နှိမ်နင်းနိုင်ပြီ ဖြစ်ပါသည်။ ထည့်သွင်းစဉ်းစားသင့်သည့် အခြားအချက်သည် ဖျက်ပိုးကြောင့် ပျက်စီးသည့် သီးနှံပင်များ၏ကာလတန်ဖိုးဖြစ်ပါသည်။ ဤအချက်နှင့် ဆက်နွယ်နေသည့် အကြောင်းအရာများကို ဇယား(၁၅) ဖြင့် သီးနှံအလိုက် မြန်မာနိုင်ငံတွင် စိုက်ပျိုးစေရိယာ၊ ကုန်ထုတ်လုပ်မှု ကိန်းဂဏန်းများကို ဖော်ပြထားပါသည်။ စားသုံးသူနှင့် ကိုယ်ပိုင်စိုက်ပျိုးသူများအတွက် တန်ဖိုး ရှိမှုကိုပါ ထည့်သွင်းစဉ်းစားသင့်ပါသည်။

Order	Species	Score	Order	Species	Score
1	<i>Spodoptera litura</i>	18+	13	<i>Ferrisia virgata</i>	5+
2	<i>Helicoverpa armigera</i>	14+		<i>Myzus persicae</i>	
3	<i>Agrotis ipsilon</i>	11+		<i>Polyphagotarsonemus latus</i>	
4	<i>Spilarctia obliqua</i>	10+	19	<i>Acheta sp.</i>	4+
5	<i>Thrips palmi</i>	9+		<i>Aphis craccivora</i>	
6	<i>Aphis gossypii</i>	8+		<i>Aphis fabae</i>	
	<i>Odontotermes sp.</i>			<i>Apomecyna histrio</i>	
8	<i>Agrotis segetum</i>	7+		<i>Apoaerema modicella</i>	
	<i>Bactrocera cucurbitae</i>			<i>Aulacophora foveicollis</i>	
	<i>Bactrocera dorsalis</i>			<i>Bemisia tabaci</i>	
	<i>Scirtothrips dorsalis</i>			<i>Empoasca sp.</i>	
12	<i>Nezara viridula</i>	6+		<i>Ophiomyia phaseoli</i>	
13	<i>Bagrada hilaris</i>	5+		<i>Sesamia inferens</i>	
	<i>Epilachna indica</i>			<i>Tarbinskiellus portentosus</i>	
	<i>Epilachna 28 punctata</i>				

Table 14(cont'd) Ranking of arthropod pests scoring 3+ or more

Order	Species	Score	Order	Species	Score
30	<i>Anomala antiqua</i>	3+	30	<i>Hellula undalis</i>	3+
	<i>Athalia lugens</i>			<i>Macrotermes spp.</i>	
	<i>Bemisia sp.</i>			<i>Medythia suturalis</i>	
	<i>Callosobruchus sp.</i>			<i>Mythimna separata</i>	
	<i>Chilo suppressalis</i>			<i>Parlatoria ziziphus</i>	
	<i>Chrysomphalus aonidum</i>			<i>Phyllotreta striolata</i>	
	<i>Coptotermes curvignathus</i>			<i>Tetranychus spp.</i>	
	<i>Cricula trifenestrata</i>			<i>Thrips flavus</i>	
	<i>Crocidolomia pavonana</i>				

Table 15 Checklist of preferred names of arthropod pests

Preferred Name	Previous Name
<i>Acanthoscelides obtectus</i>	Use for <i>Bruchus obsoletus</i>
<i>Amplypterus panopus</i>	Use for <i>Compsogene panopus</i>
<i>Amritodus atkinsoni</i>	Use for <i>Idiocerus atkinsoni</i>
<i>Artona catoxantha</i>	Use for <i>Brachartona catoxantha</i>
<i>Bactrocera cucurbitae</i>	Use for <i>Dacus cucurbitae</i>
<i>Bactrocera dorsalis</i>	Use for <i>Dacus dorsalis</i>
<i>Callosobruchus analis</i>	Use for <i>Bruchus analis</i>
<i>Callosobruchus chinensis</i>	Use for <i>Bruchus chinensis</i>
<i>Condica capensis</i>	Use for <i>Perigea capensis</i>
<i>Crocidolomia pavonana</i>	Use for <i>Crocidolomia binotalis</i>
<i>Cyrtopeltis tenuis</i>	Use for <i>Nesidiocoris tenuis</i>
<i>Deporaus marginatus</i>	Use for <i>Eugnamptus marginatus</i>
<i>Diaphania indica</i>	Use for <i>Glyphodes indica</i>
<i>Diaphania pyloalis</i>	Use for <i>Glyphodes pyloalis</i>
<i>Elasmolomus sordidus</i>	Use for <i>Aphanus sordidus</i>
<i>Epilachna pusillanima</i>	Use for <i>Epilachna dodecastigma</i>
<i>Eudocima fullonia</i>	Use for <i>Othreis fullonia</i>
<i>Helicoverpa armigera</i>	Use for <i>Heliothis armigera</i>
<i>Hypolixus pica</i>	Use for <i>Lixus brachyrrhinus</i>
<i>Maruca vitrata</i>	Use for <i>Maruca testulalis</i>
<i>Methydia suturalis</i>	Use for <i>Luperodes suturalis</i>
<i>Nephotettix virescens</i>	Use for <i>Nephotettix bipunctulatus</i>
<i>Omiodes indicata</i>	Use for <i>Hedylepta indica</i>
<i>Opiomyza phaseoli</i>	Use for <i>Agromyza phaseoli</i>
<i>Orosius orientalis</i>	Use for <i>Orosius albicinctus</i>
<i>Orseolia andropogonis</i>	Use for <i>Contarinia andropogonis</i>
<i>Paraponyx stagnalis</i>	Use for <i>Nymphula depunctalis</i>
<i>Parasa lepida</i>	Use for <i>Latoia lepida</i>
<i>Phodoryctis caerulea</i>	Use for <i>Acrocerops caerulea</i>
<i>Psalis pennatulata</i>	Use for <i>Dasychira securis</i>
<i>Pseudoceroprepes piratis</i>	Use for <i>Nephoterix piratis</i>
<i>Spilarctia obliqua</i>	Use for <i>Diacrisia obliqua</i>
<i>Stenchaetothrips bififormis</i>	Use for <i>Baliothrips bififormis</i>
<i>Tarbinskiellus portentosus</i>	Use for <i>Brachytrupes portentosus</i>
<i>Thysanoplusia orichalcea</i>	Use for <i>Plusia orichalcea</i>
<i>Urentius hystricellus</i>	Use for <i>Urentius echinus</i>

Table 16. Weeds of transplanted lowland rice

Scientific name	Family	English name	Myanmar common name	Rating
<i>Alternanthera sessilis</i>	Amaranthaceae	sessile joy weed	ပုစွန်စာ	+
<i>Cyperus brevifolius</i>	Cyperaceae	Mullumbimby couch	မြက်မုံညှင်းရွက်တို	P
<i>Cyperus compactus</i>	Cyperaceae		မြက်မုံညှင်းအလုံး	+
<i>Cyperus compressus</i>	Cyperaceae		မြက်မုံညှင်းအပြား	+
<i>Cyperus difformis</i>	Cyperaceae	small flowered umbrella plant	မြက်မုံညှင်းအစိမ်း	+++
<i>Cyperus iria</i>	Cyperaceae	umbrella sedge, rice flat sedge	မြက်မုံညှင်းအဝါ	+++
<i>Echinochloa colona</i>	Poaceae	jungle rice, awnless barnyard grass	ဝမ်းဘဲစာမြက်	+++
<i>Echinochloa crus-galli</i>	Poaceae	barnyard grass, watergrass	ဘဲစာမြက်၊ မြက်သီး၊ မြက်ချို	+++
<i>Eclipta prostrata</i>	Asteraceae	white head, false daisy	ကြိတ်မှန်	P
<i>Eichhornia crassipes</i>	Pontederiaceae	water hyacinth, water orchid	ဗေဒါ	++
<i>Enydra fluctuans</i>	Asteraceae		ကနဖော့	
<i>Fimbristylis dichotoma</i>	Cyperaceae	fimbristylis	မြက်ကွမ်းသီးကြီး	++
<i>Fimbristylis miliacea</i>	Cyperaceae	lesser fimbristylis, grass-like fimbristylis	မြက်ကွမ်းသီးလေး	+++
<i>Ipomoea aquatica</i>	Convolvulaceae	swampy morning glory	ရေကန်စွန်း	+
<i>Leersia hexandra</i>	Poaceae	swamp rice grass, southern cutgrass	သမန်းမြက်	+
<i>Leptochloa chinensis</i>	Poaceae	red sprangle top	ဒေါင်းမြီးပျံ	+++
<i>Ludwigia adscendens</i>	Onagraceae	creeping water primose	ရေကညွတ်	+
<i>Ludwigia hyssopifolia</i>	Onagraceae	primose willow	ပေါင်းလေးညှင်း	+++
<i>Marsilea minuta</i>	Marsileaceae	water clover	မှိုနုတို	++
<i>Monochoria vaginalis</i>	Pontederiaceae	monochoria, pickerel weed	ကတောက်ဆတ်	+++
<i>Oryza rufipogon</i>	Poaceae	wild red rice	ဒေါင်းစပါး	++
<i>Panicum repens</i>	Poaceae	torpedo grass, panicum couch	မြက်ကြိမ်	+
<i>Pistia stratiotes</i>	Araceae	water lettuce	ရေလေဝံ	P
<i>Scirpus grossus</i>	Cyperaceae	greater club rush	ဝက်လာ	++
<i>Scirpus juncoides</i>	Cyperaceae		တလိုင်းခေါင်းမြက်	+
<i>Sphenoclea zeylanica</i>	Sphenocleaceae	goose weed	လယ်ပတူ	+++
<i>Spilanthus filicaulis</i>	Asteraceae		ဗိစပ်	+
<i>Typha angustifolia</i>	Typhaceae	lesser reedmace, narrow leaved cattail	ရှင်နွယ်လုံး	+

Species composition: Grass = 6 spp; Broadleaved = 13 spp; Cyperus = 9 spp

Table 17. Weeds of upland rice in Myanmar

Scientific name	Family	English name	Myanmar common name	Rating
<i>Amaranthus spinosus</i>	Amaranthaceae	spiny amaranth	ဟင်းနုနွယ်ဆူးပေါက်	+++
<i>Amaranthus viridis</i>	Amaranthaceae	slender amaranth	တောဟင်းနုနွယ်	++
<i>Bidens pilosa</i>	Asteraceae	hairy beggar ticks	နေကြာကလေး ၊ မုဆိုးမလုံ	+
<i>Boerhavia diffusa</i>	Nyctaginaceae	red spiderling	ပရနွေဝါနီ	+
<i>Boerhavia erecta</i>	Nyctaginaceae	erect spiderling	ပရနွေဝါပင်ထောင်	+
<i>Borreria laevis</i>	Rubiaceae	button weed	ချိုးခြေထောက်	+
<i>Cardiospermum halicacabum</i>	Sapindaceae	balloon vine, winter cherry	ကုလားမျက်စေ့	P
<i>Celosia argentea</i>	Amaranthaceae	celosia	ကြက်မောက်ဖြူ	+
<i>Chloris barbata</i>	Poaceae	swollen finger grass	မြက်ခရာ	+
<i>Cleome viscosa</i>	Capparaceae	wild cassia	ဟင်းဂလာဝါ	+
<i>Commelina benghalensis</i>	Commelinaceae	wandering jew, tropical spider wort	ဝက်ကြွပ်	++
<i>Commelina diffusa</i>	Commelinaceae	spreading day flower	ဝက်ကြွပ်	++
<i>Convolvulus arvensis</i>	Convolvulaceae	European bindweed, field bindweed	မက္ကဆီပက်ပေါင်း၊ ကောက်ရိုးနွယ်	+
<i>Crotalaria striata</i>	Papilionaceae	striped crotalaria	တောပိုက်ဆံ	P
<i>Cyperus compressus</i>	Cyperaceae		မြက်မုံညှင်းအပြား	+
<i>Cyperus iria</i>	Cyperaceae	umbrella sedge, rice flat sedge	မြက်မုံညှင်းအဝါ	+++
<i>Cyperus rotundus</i>	Cyperaceae	rice flat sedge	မြက်မုံညှင်းဥနက်	+++
<i>Dactyloctenium aegyptium</i>	Poaceae	crowfoot grass, coast button grass, Egyptian finger grass	လေးစွမြက်	+
<i>Digitaria ciliaris</i>	Poaceae	tropical crabgrass, summer grass, finger grass	လက်သဲခွမြက်	++
<i>Digitaria setigera</i>	Poaceae		လက်သဲခွမြက်	++
<i>Echinochloa colona</i>	Poaceae	awnless barnyard grass, jungle rice	ဝမ်းဘဲစာမြက်	+++
<i>Eleusine indica</i>	Poaceae	goose grass, bull grass, wire grass	ဆင်ငိုမြက်	+++
<i>Eragrostis atrovirens</i>	Poaceae	wiry love grass	ကြိုးကြာမြက်	P
<i>Euphorbia hirta</i>	Euphorbiaceae	garden spurge, snake weed	ကျွဲကျောင်းမှင်စေး	+
<i>Gomphrena celosioides</i>	Amaranthaceae	gomphrena	တောကြက်မောက်ကလေး	++
<i>Hyptis suaveolens</i>	Lamiaceae	bush tea, wild spikenard	ပင်စိမ်းရိုင်း	P
<i>Ipomoea triloba</i>	Convolvulaceae	pink convolvulus, three-lobe morning glory	ကန်စွန်းနွယ်	P
<i>Leucas linifolia</i>	Lamiaceae	leucas	ပင်ကူထိပ်ပိတ်	+
<i>Mimosa invisa</i>	Mimosaceae	giant sensitive plant	ထိကရုန်းကြီး	+
Species composition: Grass = 9 spp; Cyperus = 3 spp; Broadleaved = 27 spp				

Table 17. (cont'd) Weeds of upland rice in Myanmar

Scientific name	Family	English name	Myanmar common name	Rating
<i>Mimosa pudica</i>	Mimosaceae	sensitive plant	ထိကရုန်း	+ +
<i>Oxalis latifolia</i>	Oxalidaceae	oxalis, pink shamrock	မှိုချဉ်	P
<i>Passiflora foetida</i>	Passifloraceae	red fruit passion flower	ခြင်းကြားသီးပင်	P
<i>Phyllanthus fraternus</i>	Euphorbiaceae	niruri	စာကလေးစီး	+
<i>Physalis angulata</i>	Solanaceae	wild cape gooseberry	ဘောက်ပင်	P
<i>Portulaca oleracea</i>	Portulacaceae	common purslane	သံပုရစ်	+
<i>Saccharum spontaneum</i>	Poaceae	saccharum	ကိုင်း	+ +
<i>Setaria geniculata</i>	Poaceae	knotroot foxtail, slender pigeon grass	ခွေးမြီးပုတ်	+
<i>Scoparia dulcis</i>	Scrophulariaceae	sweet broom weed, scoparia weed	ဒန္နသုခ	+
<i>Tridax procumbens</i>	Asteraceae	tridax, coat button	တပင်ရွှေထီး	P
Species composition: Grass = 9 spp; Cyperus = 3 spp; Broadleaved = 27 spp				

Table 18. Weeds of Myanmar

Scientific Name	Family	English common name	Myanmar common name	Principal crop attacked	Rating
<i>Abutilon indicum</i> (L.) Sweet	Malvaceae	Indian lantern flower	ဇောက်ခွေး	pea, cotton, upland crops	+
<i>Achyranthes aspera</i> L.	Amaranthaceae	devil's horse whip	ကြက်မောက်ဆူးပျံ	pigeon pea, rice	+
<i>Aeschynomene americana</i> L.	Fabaceae (Papilionaceae)	joint vetch		upland crops, prefers dry conditions	P
<i>Aeschynomene aspera</i> L.	Fabaceae (Papilionaceae)			rice, prefers wet conditions	P
<i>Aeschynomene indica</i> L.	Fabaceae (Papilionaceae)	joint vetch, budda pea		rice, prefers wet conditions	P
<i>Ageratum conyzoides</i> L.	Asteraceae	tropic ageratum, goat weed, blue top	ခွေးသေးပန်း၊ ကရင်မပန်းဖူး	widespread	++
<i>Alternanthera philoxeroides</i> (Mart.) Griseb.	Amaranthaceae	alligator weed			P
<i>Alternanthera sessilis</i> (L.) R.Br. ex Roem. & Schult	Amaranthaceae	sessile joyweed	ပုဇွန်စာ	rice	+
<i>Amaranthus spinosus</i> L.	Amaranthaceae	spiny amaranth, spiny pigweed	ဟင်းနုနွယ်ဆူးပေါက်	widespread, vegetables	+++
<i>Amaranthus viridis</i> L.	Amaranthaceae	slender amaranth, green amaranth	တောဟင်းနုနွယ်	cabbage, vegetables	++
<i>Axonopus compressus</i> (Sw.) P. Beauv.	Poaceae (Graminae)	broadleaf carpet grass		orchards, capsicum, perennials, vegetables	P
<i>Azolla pinnata</i> R. Br.	Azollaceae	azolla, water fern	အနီလာ	rice	P
<i>Bidens pilosa</i> L.	Asteraceae	cobbler's pegs, Spanish needle	တစ္ဆေအပိ၊ နေကြာကလေး၊ မုတ်ဆိုးမလုံ	cabbage, plantations	+
<i>Boerhavia diffusa</i> L.	Nyctaginaceae	red spiderling, tarvine	ပရနွတ်နီ	rice, maize, upland crops	+
<i>Boerhavia erecta</i> L.	Nyctaginaceae	erect spiderling	ပရနွတ်ပင်ထောင်	upland crops	+
<i>Boerreria articularis</i> (L.F) F.N. Williams	Rubiaceae			groundnut	+
<i>Borreria laevis</i> (Lam.) Griseb.	Rubiaceae	button weed	ဂျိုးခြေထောက်	rice, upland crops	P
<i>Bothriochloa ischaemum</i> (L.) Keng	Poaceae	turkestan blue stem, yellow blue stem	ပန်းတော်ဖြူ	upland crops	P
<i>Bothriochloa pertusa</i> (L.) A. Camus	Poaceae			upland rice	
<i>Brachiaria distachya</i> (L.) Stapf	Poaceae	lesser brachiaria	တဖက်သတ်	plantations, dryland crops	P
<i>Brachiaria eruciformis</i> (Sm.) Griseb.	Poaceae	sweet signalgrass	မြက်နီစပ်	perennial crops	P
<i>Brachiaria reptans</i> (L.) Gard. & C.E. Hubb	Poaceae	running grass		upland crops	P
<i>Cardiospermum halicacabum</i> L.	Sapindaceae		ကုလားမျက်စေ့	sorghum, rice, oilpalm	+
<i>Cassia tora</i> L.	Caesalpiniaceae	foetid cassia	ဒန့်ကျဲ	pigeon pea, rubber	+
<i>Celosia argentea</i> L.	Amaranthaceae	quail grass	ကြက်မောက်ဖြူ	groundnut, rice, upland crops	++
<i>Cenotheca lappacea</i> (L.) Desv.	Poaceae	barbed grass		cocoa, coconut, rubber	P
<i>Ceratopteris pteridoides</i> (Hook.) Hieron.	Parkeriaceae	horn fern, pod fern, swamp fern		rice	P

Table 18. (cont'd) Weeds of Myanmar

Scientific Name	Family	English common name	Myanmar common name	Principal crop attacked	Rating
<i>Chloris barbata</i> (L.) SW.	Poaceae	swollen fingergrass, purpletop chloris, plush grass	မြက်ခရာ	soybean, maize, sugarcane, groundnut	P
<i>Chromolaena odorata</i> (L.) R.M. King & H. Robinson	Asteraceae	bitter bush, siam weed	စာမနံ၊ ကုန်းဗေဒါ၊ နေဒဗန်	oilpalm, rubber, coffee, fruit, cashew	+ +
<i>Cleome rutidosperma</i> DC.	Capparidaceae (Cleomaceae)	yellow cleome, consumption weed	ဟင်းဂလာပြာ	orchards, rice, tobacco, immature plantations, vegetables	P
<i>Cleome viscosa</i> L.	Capparidaceae	wild caia, tick weed, spider plant	ဟင်းဂလာဝါ	rice, tobacco, upland crops	+
<i>Commelina benghalensis</i> L.	Commelinaceae	day flower, tropical spider wort, hairy wandering jew, common spider wort	ဝက်ကျွတ်	soybean, rice, upland crops	+ +
<i>Commelina diffusa</i> Burm.f.	Commelinaceae	spreading day flower		rice, brassicas, upland crops, plantations	P
<i>Convolvulus arvensis</i> L.	Convolvulaceae	European bindweed, field bindweed, small flowered morning glory	မက္ကဆီပက်ပေါင်း၊ ကောက် ရိုးနွယ်	wheat, rice	+
<i>Corchorus olitorius</i> L.	Tiliaceae	tossa jute		rice	+
<i>Crotalaria pallida</i> Aiton	Fabaceae	striped crotolaria, showy crotolaria		cassava, upland rice	P
<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	bermuda grass, couch, bahama grass	မြေစာမြက်၊ မြင်းစာမြက်	rice, soybean, groundnut, upland crops, perennial & vegetables	+ +
<i>Cyperus aromaticus</i> (Ridley) Mattf.& Kuek	Cyperaceae	greater kyllingia		rice, pineapple, watermelon, vegetables	P
<i>Cyperus babakan</i> Steudel	Cyperaceae			rice	P
<i>Cyperus brevifolius</i> (Rottb.) Hasskal	Cyperaceae	short kyllingia, white, couch, kyllingia, mullumbimby grass	မြက်မုံညှင်းရွက်တို မြက်မုံညှင်းအလုံး	rice, pineapple, watermelon	P
<i>Cyperus compactus</i> Retz.	Cyperaceae			rice	P
<i>Cyperus compressus</i> L.	Cyperaceae	hedgehog cyperus	မြက်မုံညှင်းအပြား	cocoa, coconut, watermelon, pineapple	+
<i>Cyperus difformis</i> L.	Cyperaceae	small flowered umbrella plant	မြက်မုံညှင်းအစိမ်း	rice, vegetables, orchards	+
<i>Cyperus digitatus</i> Roxb.	Cyperaceae	digitate cyperus		rice	P
<i>Cyperus haspan</i> L.	Cyperaceae			rice, pineapple	P
<i>Cyperus imbricatus</i> Retz.	Cyperaceae			paddy	P
<i>Cyperus iria</i> L.	Cyperaceae	umbrella sedge, rice flat sedge, grasshoppers cyperus	မြက်မုံညှင်းအဝါ	rice, groundnut, capsicum, pineapple, vegetables, upland crops	+ + +
<i>Cyperus odoratus</i> L.	Cyperaceae			rice, vegetables, orchards	P
<i>Cyperus pilosus</i> Vahl.	Cyperaceae	hairy cyperus		rice, capsicum, vegetables, orchards	P
<i>Cyperus polystachyos</i> Rottb.	Cyperaceae	bunchy sedge, field sedge		rice, pineapple	P
<i>Cyperus rotundus</i> L.	Cyperaceae	nutsedge, purple nutsedge	မြက်မုံညှင်းဥနက်	rice, vegetables, orchards, banana, durian, rubber, coconut, upland crops	+ + +

Table 18. (cont'd) Weeds of Myanmar

Scientific Name	Family	English common name	Myanmar common name	Principal crop attacked	Rating
<i>Cyrtococcum accrescens</i> (Trin.) Stapf	Poaceae	diffuse panic grass		banana, durian, rubber, coconut, perennial crops	P
<i>Dactyloctenium aegyptium</i> (L.) Richt.	Poaceae	crowfoot grass, coast button grass, beach wire grass, Egyptian finger grass	လေးခွမြက် ပန်းတော်နီ၊ ပန်းတော်ညို	soybean, vegetables, rubber, tapioca, upland crops, perennial crops	++
<i>Dicanthium caricosum</i> (L.) Camus	Poaceae			upland field crops, perennial crops	+
<i>Digitaria adscendens</i> (H.B.K) Henr. = (<i>D. ciliaris</i> (Retz.) Koel.)	Poaceae	finger grass, tropical crabgrass, summer grass	အင်တိုင်းမြက်ခါး လက်သဲခွမြက်	upland crops, orchards, vegetables, plantation crops	++
<i>Digitaria sanguinalis</i> (L.) Scop.	Poaceae	large crabgrass, hairy crabgrass, hairy finger grass	လက်သဲခွမြက်	rice, castor	+
<i>Digitaria violescens</i> Link	Poaceae			upland crops	P
<i>Digitaria setigera</i> R. & S.	Poaceae			upland crops, plantation crops. Prefers both moist and dry lands	+
<i>Echinochloa colona</i> (L.) Link	Poaceae	jungle rice, birds rice, awnless barnyard grass	ဝမ်းဘဲစာမြက်	vegetables, rice, upland crops, perennial crops	+++
<i>Echinochloa crus-galli</i> (L.) P.Beauv.	Poaceae	barnyard grass, water grass	ဘဲစာမြက်၊ မြက်သီး၊ မြက်ချို	rice, perennial crops	P
<i>Echinochloa oryzoides</i> (Ard.) Fritsch	Poaceae			rice	P
<i>Eclipta prostrata</i> (L.) L.	Asteraceae	white heads, false daisy	ကြိတ်မှန်	rice, groundnut, soybean, etc.	+
<i>Eichhornia crassipes</i> (Mart.) Solms	Pontederiaceae	water hyacinth, waterorchid	ဗေဒါ	rice	++
<i>Eleusine indica</i> (L.) Gaertner	Poaceae	goose grass, wire grass	ဆင်ငိုမြက်	rice, vegetables, orchards, rubber, oilpalm, cassava, coffee, tea	++
<i>Emilia sonchifolia</i> (L.) DC.	Asteraceae	emilia, red tassel flower, purple sowthistle	ကနဖော့	pineapple, vegetables	+
<i>Enydra fluctuans</i> Lour.	Asteraceae			rice	+
<i>Eragrostis atrovirens</i> (Desf.) Trin.ex Steud.	Poaceae	wiry love grass, wiry eragrostis	ကြိုးကြာမြက်	cultivated land, plantations, pineapple, banana, vegetables	+
<i>Eragrostis tenella</i> (L.) P.Beauv.ex Roem. & Schult.	Poaceae	feathery eragrostis, feathery love grass, bug's egg grass			P
<i>Eragrostis unidoides</i> (Retz.) Nees ex Steudel	Poaceae	Chinese love grass		rice, vegetables	P
<i>Erigeron sumatrensis</i> Retz.	Asteraceae	fleabane, Sumatran erigeron		orchards, vegetables, plantations	P
<i>Euphorbia heterophylla</i> L.	Euphorbiaceae	painted spurge		soybean, maize, orchards	+
<i>Euphorbia hirta</i> L.	Euphorbiaceae	garden spurge, snake weed	ကျွဲကျောင်းမင်စေး	sugarcane, orchards, upland crops, vegetables, perennial crops	+
<i>Fimbristylis dichotoma</i> (L.) Vahl	Cyperaceae	tall-fringe rush, fimbristylis	မြက်ကွမ်းသီးကြိုး	rice	++
<i>Fimbristylis globulosa</i> (Retz.) Kunth	Cyperaceae	globular fimbristylis		rice	P

Table 18. (cont'd) Weeds of Myanmar

Scientific Name	Family	English common name	Myanmar common name	Principal crop attacked	Rating
<i>F. miliacea</i> (L.) Vahl	Cyperaceae	lesser fimbriatylis, grass-like fimbriatylis	မြက်ကွမ်းသီးလေး	rice, vegetables	+++
<i>Fuirena ciliaris</i> (L.) Roxb.	Cyperaceae	umbrella grass		papaya, pineapple, banana, rice, prefer aquatic & wet conditions	P
<i>Fuirena umbellata</i> Rottb.	Cyperaceae			rice, aquatic biotype	P
<i>Gomphrena celosioides</i> Mart.	Amaranthaceae	gomphrena	ဘောကြက်မောက်လေး	cowpea, upland crops	+
<i>Hedyotis racemosa</i> Lam.	Rubiaceae	two-flowered aldenlandia		rice, pigeon pea	++
<i>Hemarthria compressa</i> (L.f.) R. Br.	Poaceae	whip grass, swamp couch		pineapple, perennial crops, aquatic biotypes	P
<i>Hydrilla verticillata</i> (L.f.) Royle	Hydrocharitaceae	water thyme, hydrilla, Florida elodea		rice	P
<i>Hydrocera triflora</i> (L.) Wight & Arn.	Geraniaceae (Balsaminaceae)	marsh henna		rice (prefers aquatic and wet conditions)	P
<i>Hydrolea zeylanica</i> (L.) Vahl	Hydrophyllaceae			rice	+
<i>Hymenachne acutigluma</i> (Steud.) Gilliland = <i>Hymenachne pseudointerrupta</i>	Poaceae			rice	P
<i>Hyptis capitata</i> Jacq.	Lamiaceae	knob weed	ဖော့မြက်	dryland crops	P
<i>Hyptis suaveolens</i> (L.) Poit	Lamiaceae	bush tea, wild spikenard	ပင်ခိမ်းရိုင်း	cultivated lands, rice	+
<i>Imperata cylindrica</i> (L.) P. Beauv.	Poaceae	blady grass, cogongrass, kunai grass	သက်ကယ်	rice, orchards, vegetables, plantation crops	+++
<i>Ipomoea triloba</i> L.	Convolvulaceae	pink convolvulus, three-lobe morning glory	ကန်ဖွန်းနွယ်	upland rice, upland crops	+
<i>Isachne globosa</i> (Thunb.) O. Ktze.	Poaceae	swamp millet, rounded isachne	ဝါးရုံမြက်	rice	P
<i>Ischaemum indicum</i> (Houtt.) Merr.	Poaceae	smut grass		maize (prefers wet land)	P
<i>Ischaemum rugosum</i> Salisb.	Poaceae	wrinkle duck-beak, wrinkled grass		rice, pineapple, watermelon, rubber	+
<i>Lantana camara</i> L.	Verbenaceae	lantana, prickly lantana	စိန်နုပန်	durian, pineapple, banana, rubber	+
<i>Leersia hexandra</i> Sw.	Poaceae	southern cut grass, swamp, rice grass	သမန်းမြက်	rice, maize	P
<i>Leptochloa chinensis</i> (L.) Nees	Poaceae	red sprangletop, feather grass	ခေါင်းဖြိုးပျံ	rice, cotton, soybean, maize, sugarcane	+++
<i>Leucas cephalotes</i> (Roth)	Lamiaceae			rice	+++
<i>Leucas linifolia</i> (Roth) Spreng.	Lamiaceae	leucas	ပင်ကူထိပ်ပိတ်	upland crops	+
<i>Leucas zeylanica</i> (L.) R. Br.	Lamiaceae			tobacco	++
<i>Limnocharis flava</i> (L.) Bunch	Butomaceae (Limnocharitaceae)			rice	P
<i>Luwigia adscendens</i> (L.) Hara	Onagraceae	creeping water primrose	ရေကညွတ်	rice	+
<i>Luwigia hyssopifolia</i> (G. Don) Exell	Onagraceae	water primrose	လယ်လေးညှင်း	rice, cotton, tobacco, vegetables	+++
<i>Luwigia octovalvis</i> (Jacq.) Raven	Onagraceae	willow primrose, willow herb		rice	+
<i>Marsilea minuta</i> L.	Marsileaceae	water clover, clover fern	မှိုနီတို	rice	+

Table 18. (cont'd) Weeds of Myanmar

Scientific Name	Family	English common name	Myanmar common name	Principal crop attacked	Rating
<i>Marsilea quadrifolia</i> L.	Marsileaceae			rice	P
<i>Melochia corchorifolia</i> L.	Sterculiaceae	wire bush, crabs eggs		rice, tobacco, upland rice	+
<i>Mentha arvensis</i> L.	Lamiaceae			groundnut, pineapple	+
<i>Mimosa invisa</i> Mart. ex Colla	Fabaceae (Mimosaceae)	giant sensitive plant	ထိကရုံးကြီး	orchards, rice	+
<i>Mimosa pigra</i> L.	Fabaceae (Mimosaceae)	giant mimosa, thorny sensitive plant		rice (prefers wet and swamp conditions)	++
<i>Mimosa pudica</i> L.	Fabaceae (Mimosaceae)	sensitive plant	ထိကရုံး	orchards, vegetables, maize, tea, rice, upland crops	+++
<i>Mitracarpus villosus</i> (Sw.) Cham. & Schldl. ex DC.	Rubiaceae			groundnut, plantations	+++
<i>Monochoria hastata</i> (L.) Solms	Pontederiaceae	monochoria	ကတောက်ဆတ်၊ ပိတောက်	rice	P
<i>Monochoria vaginalis</i> (Burm.f) Presl	Pontederiaceae	monochoria, pickerel weed	ဆတ်	rice	++
<i>Murdannia nudiflora</i> (L.) Brenan	Commelinaceae	spreading day flower		rice, vegetables, tobacco (prefer wet and saline soil)	++
<i>Najas graminea</i> Del.	Najadaceae	bushy pond weed		rice	P
<i>Nymphaea lotus</i> L.	Nymphaeaceae			rice	P
<i>Nymphoides indica</i> (L.) O. Kunze	Gentianaceae	water snow flake		rice	P
<i>Oldenlandia corymbosa</i> L.	Rubiaceae			orchards, vegetables	+
<i>Oryza rufipogon</i> Griff.	Poaceae	red rice, wild rice, wild red rice	ခေါင်းစပါး၊ ခေါင်းမြက်	rice	++
<i>Ottelia alismoides</i> (L.) Pers.	Hydrocharitaceae			rice	P
<i>Ottochloa nodosa</i> (Kunth) Dandy	Poaceae	slender panic grass		durian, cocoa, coconut, oil palm, rubber, orchards	++
<i>Oxalis latifolia</i> Kurth	Oxalidaceae	oxalis, pink shamrock		upland rice	P
<i>Panicum repens</i> L.	Poaceae	torpedograss, creeping panic grass, couch panicum	မြက်ကြိမ်	soybean, groundnut, tobacco, vegetables, plantations	+
<i>Paspalum conjugatum</i> Berg.	Poaceae	sourgrass, T-grass		vegetables, orchards, cocoa, coconut, oil palm	+
<i>Paspalum distichum</i> L. = (<i>P. paspaloides</i>)	Poaceae	seashore paspalum		rice, perennial crops	P
<i>Paspalum scrobiculatum</i> L.	Poaceae	ditch millet, bull paspalum, Indian paspalum		rice, orchards, plantations	P
<i>Passiflora foetida</i> L.	Passifloraceae	stinking passion flower, wild passion fruit	မြင်းကြားသီးပင်၊ ဆူးကာ	banana, cocoa, coconut, vegetables, plantations	+
<i>Pennisetum polystachyon</i> (L.) Schult.	Poaceae	feather pennisetum, mission grass		pineapple, banana, rubber, oilpalm, orchards	P

Table 18. (cont'd) Weeds of Myanmar

Scientific Name	Family	English common name	Myanmar common name	Principal crop attacked	Rating
<i>Pennisetum pedicellatum</i> Trin.	Poaceae	feather pennisetum, kayasuwa grass	မြက်ပန်း	perennial crops	P
<i>Pennisetum purpureum</i> K. Schum.	Poaceae	napier grass, elephant grass		rice, plantations	P
<i>Phyllanthus fraternus</i> Webster = <i>Phyllanthus niruri</i>	Euphorbiaceae	niruri	စာကလေးဖီး	rice, cocoa, coconut, tobacco, upland crops	+
<i>Physalis angulata</i> L.	Solanaceae	wild cape goose berry	ဘောက်ပင်	sunflower, cultivated lands	+
<i>Physalis minima</i> L.	Solanaceae	Chinese lantern plant, wild cape gooseberry		orchards, vegetables	P
<i>Pistia stratiotes</i> L.	Araceae	water lettuce, smart weed, lady 3 thumb	ရေဆလပ်	rice	+
<i>Polygonum tomentosum</i> Willd.	Polygonaceae	knot weed	ဘုတ်ထောင်၊ ကျွဲနှာခေါင်း	wet land rice	+
<i>Portulaca oleracea</i> L.	Portulacaceae	common purslane, pig weed	သဲပုရစ်၊ မြေပုရစ်၊ မြေ	sorghum, rice, upland crops, vegetables, groundnut	++
<i>Pteridium esculentum</i> (Forst.f.) Cockayne	Dennstaedtiaceae	common bracken	ထောက်	banana, guava, pineapple, oil palm	+
<i>Pueraria phaseoloides</i> (Roxb.) Benth.	Fabaceae (Papilionaceae)	puero, tropical kudzu	ပဲရိုင်း	bean	+
<i>Richardia braziliensis</i> (Moq.) Gomez	Rubiaceae	pursley, Brazil calla lily, white eye, Mexican clover	ရှမ်းပြေ	cowpea, upland rice, perennial crops	++
<i>Rotala indica</i> (Willd.) Koehne	Lythraceae			rice	P
<i>Rottboellia cochinchinensis</i> (Lour.) W.D. Clayton (<i>Rottboellia exaltata</i>)	Poaceae	itchgrass, corngrass	မြက်ယားငယ်	rice, sugarcane, prefers well drained lands	+
<i>Saccharum spontaneum</i> L.	Poaceae	saccharum	ကိုင်း	upland crops, perennial crops	+
<i>Sacciolepis indica</i> (L.) A. Chase	Poaceae	Indian cupscale grass		rice	P
<i>Sagittaria guayanensis</i> H.B.K.	Alismataceae			rice	P
<i>Sagittaria trifolia</i> L.	Alismataceae	old world arrowhead		rice	P
<i>Scirpus grossus</i> L.f.	Cyperaceae	greater club rush	ဝက်လာ	rice	++
<i>Scirpus juncooides</i> Roxb.	Cyperaceae		တလိုင်းခေါင်းမြက်၊ မြက် ကလုံး	rice	++
<i>Scirpus lateriflorus</i> Gmelin	Cyperaceae			rice	P
<i>Scirpus maritimus</i> L.	Cyperaceae			rice	P
<i>Scirpus supinus</i> L.	Cyperaceae			rice	P
<i>Scleria levis</i> Retz.	Cyperaceae			papaya, banana	P
<i>Scleria sumatrensis</i> Retz.	Cyperaceae	Sumatrum scleria			P
<i>Scoparia dulcis</i> L.	Scrophulariaceae	sweet broom weed, scoparia weed	ဒန္တသုခ	sorghum	+
<i>Senna obtusifolia</i> (L.) Irwin & Barneby	Fabaceae			rice	P

Table 18. (cont'd) Weeds of Myanmar

Scientific Name	Family	English common name	Myanmar common name	Principal crop attacked	Rating
<i>Setaria geniculata</i> (Lam.) P. Beauv.	Poaceae	knot root foxtail, slender pigeon grass, bristle grass		rice	P
<i>Sida acuta</i> Burm. f.	Malvaceae	broom weed, southern sida, spinyhead sida	တံမြက်စည်းပင်၊ ရွှေတံတိုင်း	plantations	+
<i>Solanum nigrum</i> L.	Solanaceae	blackberry nightshade	ဘောက်လောက်ညို	vegetables	P
<i>Sphaeranthus africanus</i> L.	Asteraceae			rice	+
<i>Sphenoclea zeylanica</i> Gaertn.	Sphenocleaceae	goose weed	လယ်ဝတူ	rice	++
<i>Spilanthus filicaulis</i> (Schum. & Thonn.) C.D. Adams	Asteraceae		ဘိစပ်	sorghum, pigeon pea	+
<i>Sporobolus indicus</i> var. <i>diander</i> (Retz.) P. Beauv.	Poaceae	tussocky sporobolus	ပြောင်းစားဘီလူး၊ ပွင့်ဖြူ	pineapple, plantations, dry places	P
<i>Striga asiatica</i> (L.) O. Kuntze	Scrophulariaceae	witch weed		rice, sorghum, sugarcane, corn	+
<i>Trianthema portulacastrum</i> L.	Aizoaceae	giant pigweed, black pigweed	လိပ်ရင်ဘတ်	cotton, upland crops, perennials, vegetables	+++
<i>Tridax procumbens</i> L.	Asteraceae	tridax, coat buttons	တပင်ရွှေထီး	cotton, vegetables	+
<i>Typha angustifolia</i> L.	Typhaceae	narrow-leaf cattail, bulrush, lesser reedmace	ရှင်နွယ်လုံး၊ ပိတ်စွယ်	rice	P
<i>Utricularia aurea</i> Lour.	Lentiburiaceae	bladder wort		rice	P
<i>Urena lobata</i> L.	Malvaceae	hibiscus burr, cadillo	ကပ်စေးနဲ့	upland crops	+
<i>Vernonia cinerea</i> (L.) Less.	Asteraceae	little ironweed, vernonia		orchards	P
<i>Zoysia matrella</i> (L.) Merr.	Poaceae	siglap grass, Korean grass		cocoa, coconut	++

Table 19 Production statistics for Myanmar crops^a

Myanmar is described in its 1999 *Information on Myanma Agriculture* as a forest-clad mountainous country with plateaus, valleys and plains. The mountains, ranging in altitude from 900m to over 2 000m, form natural boundaries between it and her neighbours. Rivers flow from north to south.

Some 71% of its 46.4 million population are involved with agriculture (FAO 1998). More than 60 different crops are grown in a cultivated area of 12 276 000 hectares. Rice occupies 47% of the total crop area, with other cereals (mainly maize, sorghum and wheat, in that order) a further 5%. Next in importance come oilseed crops, followed by pulses and industrial crops. The area under cropping expanded significantly between 1960 and 1980, due largely to farm mechanisation and increasing availability of irrigation water.

Crop	Sown area ('000 ha)	Production ('000 tonnes)
Cereals		
Paddy	5 789	16 453
Wheat	88	94
Maize	252	11
Sorghum	246	149
Other	28	
Oil crops		
Groundnut	450	540
Sesame	1 035	296
Sunflower	120	90
Oil palm	9	18
Mustard	20	10
Other oil seeds	61	
Peas and beans		
Black gram	492	419
Butter beans	45	42
Green gram	546	448
Sultapya	48	35
Pelun	78	59
Chick pea	20	90
Pigeon pea	252	176
Industrial crops		
Cotton	267	164
Jute	38	33
Sugarcane	202	5 234
Rubber	135	30
Virginia tobacco	38	62
Food crops		
Potato	22	237
Onion and garlic	41	278
Chilies	84	58
Vegetables	208	
Plantation crops		
Tea	68	67
Coffee	6	2

^aAdapted from Anon 1999

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