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CARIBBEAN FOOD CROPS SOCIETY

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**Forty First
Annual Meeting 2005**

GUADELOUPE

**Vol. XXXXI - Number 1
T-STAR - Invasive Species Symposium**

WELCOME AND BACKGROUND

OPENING REMARKS by *Dr. William F. “Bill” Brown, Assistant Dean for Research, Florida Agricultural Experiment Station, University of Florida, 1022 McCarty Hall, PO BOX 110200, Gainesville, FL 32611-0200, Phone: 8-1-352-392-1784; Email: WFBrown@ifas.ufl.edu.*

Honorable Pierre Ehret, Dr. Cheek, Dr. Chesney, Dr. Parham, Dr. Beale, distinguished colleagues, ladies and gentlemen. I am very happy to moderate the opening session of this TSTAR Symposium on “Embedding a Caribbean Invasive Species Safeguarding Strategy within a Regional Integration Framework: Institutional and Technical Issues”.

In 1999 TSTAR, the Tropical and Subtropical Agricultural Research program funded by the U.S. Department of Agriculture sponsored a workshop at Homestead, Florida as a first attempt to gain an in-depth understanding of invasive species issues. A follow-up workshop was held in 2001 at the University of Guam. The consensus from these two workshops was that the alarmingly increased spread of highly damaging invasive species that has accompanied the globalization of markets and burgeoning growth in trade is doing unprecedented damage to agriculture and to the natural environment. Consequently the U.S. Congress increased the level of funding of the TSTAR program to enable greater research support of programs to mitigate invasive species.

At the 38th annual meeting of the CFCS in Martinique in 2002 the CFCS Board of Directors took the decision to hold a symposium at the 39th annual CFCS meeting in 2003 in Grenada on “Challenges and Opportunities in Protecting the Caribbean, Latin America and the United States from Invasive Species”; and TSTAR was asked to take the lead in organizing this symposium. The Grenada TSTAR Symposium made a large stride in formulating a regional strategy to safeguard the Greater Caribbean Region against invasive species. Also in Grenada the Caribbean Invasive Species Working Group was formed to work toward the operationalization of a Greater Caribbean safeguarding strategy. Thus in June 2004 the Caribbean Invasive Species Working Group conducted a workshop in Port of Spain on “Facilitating Safer US-Caribbean Trade: Invasive Species Issues”.

These TSTAR symposia and the workshop highlighted, *inter alia*, the critical need for timely and reliable information on invasive species to trigger precautionary and preventive measures. However to enable the construction of an invasive species information system certain institutional arrangements must first be put in place.

Thus the main purpose of today’s TSTAR symposium is to gain an understanding of institutional and technical issues that must be taken into account as we chart the way forward in our efforts to operationalize a regional safeguarding strategy.

Dr. Guy Anais, President of CFCS, invited the Caribbean Invasive Species Working Group to come to Guadeloupe in February, 2005 to meet with him, the CFCS Program Committee and the CFCS Local Arrangements Committee. The agenda for this TSTAR symposium was largely developed during this very pleasant visit.

Finally I wish to acknowledge the hard work of my fellow Caribbean Invasive Species Working Group members: Everton Ambrose, Carlton Davis, Gilly Evans, Moses Kairo, Margaret Kalloo, Waldy Klassen, Bruce Lauckner, Aaron Parke, Gene Pollard, Martha Roberts, Mike Shannon, Ranjit Singh and Claude Vuillaume.

OPENING REMARKS by *Mr. Pierre Ehret, Chargé de mission pour la réglementation phytosanitaire des DOM – Ministère chargé de l'agriculture – DGAL/SDQPV, ZAC d'Alco - BP 3056, 34034 MONTPELLIER CEDEX 1, Tel : 33 4 67 10 18 17, email: pierre.ehret@agriculture.gouv.fr*

J'improvise quelques salutations, en l'absence de Mme Sophie Villers, la Directrice Générale de l'Alimentation, puisque je représente ici l'une des sous-directions incluses dans la Direction Générale de l'Alimentation, en l'occurrence la Sous-Direction de la Qualité et de la Protection des Végétaux.

Les problématiques liés aux effets néfastes et aux alternatives à l'intensification de l'agriculture de la Caraïbe sont au cœur des activités de cette direction chargée de la sécurité et de la qualité des aliments, mais également des problématiques de santé animale et de santé des végétaux, qui sont de fait très liées à la problématique alimentaire.

Personnellement, j'aurai l'occasion de présenter des travaux relatifs à la réglementation phytosanitaire et à la protection des territoires et des filières de productions en s'appuyant sur les analyses de risque phytosanitaire, mais je ne doute pas que des collègues vétérinaires ne manqueront pas de vous présenter d'autres facettes des actions de notre direction générale.

Je profite de cette tribune pour remercier les organisateurs de la rencontre, la CFCS et l'INRA et en particulier leurs directeurs, pour cette invitation et pour l'occasion qui nous est donnée de présenter notre travail et celui des collègues des Antilles. Merci beaucoup.

I'm improvising a greeting, in the absence of Mrs. Sophie Villers, the General Director of the General Food Directorate, because I represent here one of the divisions included in this Directorate, the Plant Protection and Plant Quality Division.

Problems connected to the negative effects of intensification on Caribbean agriculture and their alternatives are in the heart of the activities of this directorate in charge of food safety and food quality, but also in charge animal health and plant health, which are actually very connected to the food issues.

Personally, I will have the occasion to present work done in relation with the phytosanitary regulation and to the protection of territories and agricultural productions with the help of phytosanitary risk assessment, but I do not doubt that veterinarian colleagues will present you the other facets of the actions of our Directorate.

I take advantage of this opening speech to thank the organizers of the meeting, for this invitation and for the opportunity given to us to present our work and the work of the colleagues of the French West Indies. Thank you very much.

OPENING REMARKS by *Dr. Jimmy Cheek, Senior Vice President for Agriculture and Natural Resources, University of Florida, 1008 McCarty Hall, P.O. Box 110180, Gainesville, FL 32611-0180; email: JGCheek@mail.ifas.ufl.edu* .

Distinguished colleagues, Honorable Pierre Ehret, Dr. Chesney, Dr. Parham, Dr. Beale, ladies and gentlemen. It is a great pleasure for me to participate in this symposium on invasive species. Invasive species, from both an ecological and an economic perspective, are certainly very important to the Caribbean and South, Central and North America.

When we look at agriculture and natural resources in Florida, we see that they are threatened on a daily basis by new and emerging pathogens – viruses, bacteria, fungi – and by insects, invasive plants and invasive animals including invasive fish. New introductions of invasive species into Florida can come about in several ways: First, some of the new introductions can be attributed to natural events such as hurricanes. Four of these violent storms struck Florida in 2004, and one of these, Hurricane Ivan, brought Asian soybean rust into Florida. A second pathway of introduction is international trade and tourism, which in Florida, as in the Caribbean, involves the arrival of large numbers of visitors and large quantities of goods; and they are sources of some of the introductions of invasive species from throughout the world. And then there are the potential acts of bioterrorists. While no catastrophic bioterrorist attack has occurred in Florida, this certainly is a possibility.

If we look at Florida, we see that during a short period of time a number of invasive pests have come into our state: sudden oak death, melaleuca, hydrilla, tropical soda apple, air potato, geranium wilt that affects potatoes, the snakehead fish and other exotic animals. We have also had much greater spread of citrus canker within Florida as a result of the hurricanes last year. In addition, the Burmese python and several other species of non-native snakes now live in the Everglades, and they are becoming major problems in the state of Florida. These are some of the issues that we face.

Among the concerns that we have as a university are the recognition of the invasive species within our state and the development of the means to respond to them in appropriate ways. We need to diagnose them and find out what they are as a basis for coping with them. In this respect, we have the Plant Diagnostic Laboratory in Gainesville, which serves as the headquarters of the Southern Plant Diagnostic Network. This network connects the diagnostic capabilities of the twelve southern states and Puerto Rico and employs distance digital information technology for engaging experts at various dispersed locations. The network, centered in IFAS at Gainesville, is very important in making diagnoses, finding out exactly where these harmful species are located and issuing recommendations on how to manage them.

With respect to the impacts of invasive species in the state of Florida, as well as in the Caribbean and Latin America, the ecological damage is of very great concern. If you travel through South Florida, you will see that invasive plants such as melaleuca have taken over the entire landscape. In addition to tremendous ecological damage, there are also immense economic impacts, which include both direct losses and costs of control. The control costs are borne not only by the agricultural sector, but also by the environmental and natural resources sectors. Recently I participated in a meeting of state agencies and universities in Tallahassee. A major concern of the Florida Department of Environmental Protection expressed at this meeting was the urgent need for substantial resources to control invasive species on public lands and in public bodies of water. We have extensive tracts of natural lands in the state of Florida owned by our government that are being taken over by hard-to-manage invasive species. We need to generate scientific information on the effects of invasive species on our ecosystems and develop technologies for managing and mitigating their impacts.

Programs to cope with invasive species must be built on a foundation of public awareness. Citrus canker is an example of an invasive species problem that many people living in Florida's cities do not understand. Many urban dwellers do not understand how citrus canker spreads, nor the great danger it poses to our economy, nor the urgent need to swiftly remove diseased trees from back yards and destroy them. Consequently, many urban homeowners have been unwilling to cooperate with the program to eradicate this invasive disease, even though it is a dire threat to the citrus industry of our state. So public awareness is a critical aspect of the invasive species issue. We need to gain and communicate a deeper understanding of the invasive species problem – including how to slow or stop the spread of harmful species – and of the need to develop technologies for managing them. In some cases we need to build public support to fund programs to cope with invasive species, and we need to shore up public resolve to maintain a campaign once it is started. So the public must be deeply involved in invasive species issues.

If we look at the University of Florida and IFAS, we believe that we are in a unique location to address these issues along with our colleagues in the Caribbean and Central and South America. Invasive species are a major concern to our agricultural producers, our natural resources managers, our university, and our government within the state of Florida, and the meeting in Tallahassee that I described a moment ago is an example of that. The ecological and economic impacts of invasive species are immense for the state and for the region, and how we deal with and resolve this issue will be critical to the future of our agriculture, natural resources and international programs.

I am delighted to be here to represent the University of Florida. I am delighted to be a partner with the Caribbean and with Central and South America in addressing this issue, and I think the number of scientists the university has here is indicative of the priority of the issue, as is the overall emphasis that the University is placing on invasive species. Thank you very much!

OPENING REMARKS by Dr. H. Arlington D. Chesney, Director, Caribbean Regional Office and Adviser to the Director General, Inter-American Institute for Cooperation on Agriculture, IICA Headquarters, San Jose, Costa Rica. Phone 506-216-02-22; FAX: 506-216-02 58; Arlington.Chesney@iica.int.

Mr. Chairman, Honourable Pierre Ehret, Professor Brown, Professor Jimmy Cheek, Dr. Parham, Dr. Beale, a special salutation to the agricultural scientists of the Caribbean on whose shoulders a significant responsibility resides for the repositioning of agriculture in the Region, members of the media, other distinguished ladies and gentlemen, Good Morning.

First of all, let me apologise for the absence of my Director General, Dr. Chelston Brathwaite, who because of last minute changes to his schedule of visits throughout the Caribbean had to leave the lovely island of Guadeloupe this morning. However, he has asked me to assure you that IICA's support for not only this Symposium Session but indeed the entire Invasive Species Initiative remains steadfast and unwavering.

Mr. Chairman, this support is natural to IICA, as our official involvement with Invasive Species is longstanding. It dates back to 1977, when the VIIth Inter-American Conference of Agriculture in Honduras expressed its concern regarding the pest and disease problems of plants and animals throughout the Western Hemisphere.

Immediately, in 1978 based on our client-led approach to the development of our Work Programme, a Special Committee of the 18th Annual Meeting of our Board of Governors recommended that the Institute develop a proposal to establish a mechanism to coordinate Hemispheric efforts to fight pests and diseases of animals and plants that were causing significant economic losses. Consequently, IICA established a Hemispheric Animal and Plant

Protection Programme to prevent, control and, if possible, eradicate pests and diseases which (i) cause economic damage to plants and animals in the Hemisphere and (ii) threaten to spread from one region to the other within the Hemisphere. This second objective in a true sense is dealing with Invasive Species, which I am advised, are defined as species that evolved elsewhere and have been intentionally or unintentionally relocated. As such, Mr. Chairman, IICA has been addressing the issue of Invasive Species, as part of a well respected and established Agricultural Health Programme in the Caribbean, for over a quarter of a century.

Within the last decade, our focus has sharpened as a consequence of the invasion into the Region's agricultural sector of Hibiscus Mealy Bug, Papaya Mealy Bug, Fire Ants, Giant African Snail, Black Sigatoka and Water Hyacinth; the knowledge that these invasions could escalate with increased trade due to globalisation and trade liberalization, with the greater movement of people due to a growing tourism industry in the Caribbean; and with the greater frequency of hurricanes acting as a mechanism for spread.

- (i) Consequently, in the sharpening of this focus, with as appropriate, the support of some of our Strategic Partners, such as the CARICOM Secretariat, FAO, and PAHO, we initiated a number of actions: -
- (ii) An assessment of countries' capabilities in animal and plant health;
- (iii) Based on these national assessments, sensitisation of the scientific and political community of the need to address the institutional and infrastructural deficiencies that were identified.
- (iv) Promotion of the concept of the Caribbean Agricultural Health and Food Safety Agency (CAHFSA) that will be supportive and add value to effective and functioning National Agricultural Health and Food Safety Agencies or Systems; and
- (v) Advocating the notion of the need for countries to shift emphasis in the prevention of entry of pests and diseases from borders inwards to borders outwards.

We were therefore very pleased when the USDA in 1999, through its Tropical and Sub-Tropical Agricultural Research (T-STAR) Programme, recognized the major challenges posed to Caribbean countries by Invasive Species and the need for concerted action, and organized a Workshop on "Mitigating the Effects of Exotic Pests on Trade and Agriculture – Part A: The Caribbean. In Keeping with our previous work, we presented a paper entitled, "Assessment of the Plant Health Systems in the Caribbean."

Mr. Chairman, I have chronicled IICA's involvement in this area, to exemplify why it was so easy for us to become totally involved in this recent set of actions, led by the University of Florida, to rekindle efforts to deal with the threat of Invasive Species in a coordinated fashion. With Everton Ambrose very effectively leading our charge, we have been actively involved in all of the Symposia, Workshops and Working Group meetings starting with the Symposium held at the 39th Meeting of the Caribbean Food Crops Society in 2003 in Grenada. Further, along with CABI, we have worked on the development of the Strategy Document – Caribbean Regional Invasive Species Intervention Strategy (CRISIS). Today, Everton Ambrose, on behalf of the Invasive Species Working Group (CISWG) will present on a very important subject, "Some ideas on the operationalisation of CRISIS". That is, how to move from paper and talk to Action.

Mr. Chairman, let me close by repeating that at least under this Administration, IICA's support to the Invasive Species Initiative is irrevocable. We see it as an important plank in the efforts of Caribbean Countries to facilitate the competitiveness of their agricultural commodities in national, regional and extra regional markets. However, for this Initiative to live up to this expectation there is need for national, regional, hemispheric and international institutions to have one vision, an agreed set of goals and outputs and a clear understanding of the required efforts, singly and jointly. We recommend to you our slogan, "Working Together." In this way we will eliminate institutional and national borders and recognize only ecological borders.

Mr. Chairman, thank you very much and we trust that with God's Blessings the results of this Symposium will contribute significantly to enhancing the quality of life of our peoples.

OPENING REMARKS by Dr. Wendel Parham, Executive Director, Caribbean Agricultural Research and Development Institute (CARDI), P.O. Bag 212, University Campus, St Augustine, Trinidad and Tobago. Phone: +1 868 645 1205/6/7; Fax: +1 868 645 6357; executive@cardi.org.

Thank you Mr. Chairman – Professor William F Brown, University of Florida/IFAS. Honourable Pierre Ehret, Charge de mission DOM, Mission de Cooperation Phytosanitaire, Ministry of Agriculture, France, Dr Alberto Beale, CFCS/University of Puerto Rico, Professor Jimmy Cheek Senior Vice President, University of Florida, Dr Arlington Chesney, Director for Caribbean Operations and Advisor to the Director General of IICA, Participants, Colleagues, Ladies and Gentlemen: A very pleasant Good Morning!

It is a pleasure for me to be here and to join others at the Head Table in welcoming you to this T-Star Invasive Species Symposium Session which is a part of our 41st Annual Meeting of the Caribbean Food Crops Society.

This special workshop entitled “Embedding a Caribbean Invasive Species Safeguarding Strategy within a Regional Integration Framework: Institutional and Technical Dimensions is sponsored by the USDA-funded Tropical and Subtropical Agricultural Research (TSTAR) Program of the Universities of Florida, Puerto Rico and the Virgin Islands. On behalf of CFCS and CARDI, I wish to thank the Principals of the TSTAR programme for this kind sponsorship and to consider this CFCS Meeting as an appropriate Forum.

At this time, I once again convey greetings on behalf of the CARDI family (The Boards of Governors and Directors and the staff of CARDI) and on my own behalf. As you may be aware CARDI has been actively involved with the work on Invasive Alien Species in the Region and maintains a special interest in this area as we seek to protect and sustain agricultural production and trade in agricultural and food products.

Most of the flora and fauna we see around us in the Caribbean are “invasive” in some sense or other, and this includes humans who either invaded the area, were brought into the area, or migrated to the area for various reasons including political, economic, social and other. Very little of the Region is as Columbus found it 500 years ago; the small land area of most islands has ensured that human influence has been able to penetrate, settle and cultivate all but few small areas of original forest mainly in the larger, more mountainous islands.

There is no doubt that human influence has been responsible for the introduction of most invasive species, many have been deliberate introductions. Animals were introduced for food and domestic use; plants were introduced for food and ornamental purposes. The mongoose was introduced as an early form of biological control. CAB International listed 552 species as alien to the Caribbean Region and noted that 23 species were considered to becoming major invasive threats.

Although not all the deliberate introductions of species have had the expected benefits, the accidental introductions have rarely been beneficial and have quite often been quite catastrophic. A good example of this was the Pink Mealy Bug (PMB) invasion of the mid 1990s. Somehow a few Pink Mealy Bugs were accidentally imported into Grenada and within a very short time period the whole island was very highly infested and many ornamental and food crops, notably hibiscus, ochro and sorrel were wiped out.

CARDI was very proud to have been in the forefront of the successful regional fight against the PMB. We sourced the expertise in the form of Dr Gautam from India. Dr Gautam indicated and demonstrated the biological control methods necessary; laboratories to multiply the

biological control agents were set up in Grenada and other infected countries and the problem, which at one time seemed set to destroy the environment of the region, was brought under control. The coconut lettuce yellowing, the carambola fruit fly, the Giant African Snail and Asian Chilli thrips are current major concerns.

The PMB experience demonstrated to the general public how dangerous invasive species can be. It also was one of the prompts behind the Caribbean Food Crops Society organising a seminar on invasive species during its 39th meeting in Grenada in 2003.

Out of this seminar came a working group on Invasive Species, which CARDI has been very proud to chair. Our agreement with the University of Florida (UF) has facilitated the very efficient functioning of this working group, as UF has thrust considerable human and financial resources into the group. As most people know the group comprises (besides CARDI and UF), CABI, CARICOM, CIRAD, FAO, Florida A&M University (FAMU), IICA, and UWI.

A product of this working group is the drafting of a document entitled “Caribbean Regional Invasive Species Intervention Strategy (CRISIS)” which was drafted by IICA (thanks to Everton Ambrose), by UF (thanks Gilly Evans) and the other members of the group. The CARICOM Secretariat presented it to COTED and COTED mandated CARDI to circulate the document for comments to the CARICOM Governments. This is work in progress.

This group led by CARDI, also organised the workshop entitled: “Facilitating Safer US – Caribbean Trade: Invasive Species Issues Workshop” with funding from CDB, UF, IICA, FAO. This was held on 2-4 June, 2004 in Trinidad and Tobago and participants from English, French, Spanish, Caribbean, US, Europe and South Africa attended. An output of that Workshop was a resolution signed by UWI, CARDI, IICA, CABI and UF and sent to governments of the Caribbean Basin countries sensitising them on the issue of invasive species.

Another output of the working group is this session being held here today at this 41st Annual meeting of the CFCS. We are thankful to CFCS for allowing us this opportunity. The working group is also holding meetings and discussions during the time we are all here in Guadeloupe. I wish to recognise and thank our colleagues in the group for their dedication and hard work in this most important area.

I am looking forward to hearing the presentations today and I am sure that we are all going to learn a lot to apprise ourselves of the situation with respect to Invasive Alien Species and will be better prepared to carry the work forward.

Once again, welcome and do enjoy and participate in the deliberations. I thank you!

OPENING REMARKS by *Dr. Alberto Beale, Agronomy and Soils Department, University of Puerto Rico, Botanic Garden South, Guayacan Street 1193, San Juan, PR 00926-1118*
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Distinguished colleagues, Honorable Pierre Ehret, Dr. Cheek, Dr. Chesney, Dr. Parham, ladies and gentlemen.

The Caribbean Food Crops Society is delighted to host this second symposium on invasive species. Recently I read the Proceedings of the first annual meeting of the Caribbean Food Crops Society held 40 years ago, and it records discussions by members of the Society concerning important problem areas in which they could work together. And one of the areas identified for working together was invasive species—insects and other pests that were invading the Region. So it is synergistic to first have TSTAR and now the larger Caribbean Invasive Species Working Group to come and join us in a symposium on this common problem.

Our Society offers the 39 Nations, Territories and States in the Greater Caribbean Basin as an audience for this invasive species symposium. I would like to mention an area that we

should emphasize, and that is institutional collaboration. Indeed greater and more effective institutional collaboration is one of the aims of this specific invasive species symposium.

So I heartily welcome all of you to this symposium, and already I can announce that next year at the 42nd annual meeting of the Caribbean Food Crops Society in Puerto Rico we will have a follow-up symposium on this particular topic.