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INTERAFRICAN PHYTOSANITARY COUNCIL

Nouveaux membres du personel du CPI

New Staff for IAPSC

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New Director for IAPSC

MEZUI M'ELLA Jean Gérard
Director of IAPSC

The new Director of IAPSC, Mezui M'Ella Jean Gérard, is of Gabonese nationality. He was born in Gabon on 28 November 1962. He is married and has ten children.

Mr. Mezui M'Ella Jean Gérard is an Agricultural Engineer and a Phytosanitary Inspector. He is holder of a Certificat d'Etudes Approfondies (Certificate of Advanced Studies) in Agronomy (Plant Protection Option) from the Faculty of Agronomy, Gembloux (Belgium).

His academic studies were enhanced by half a dozen professional training courses undertaken in different countries including France, Belgium, Japan, Cameroon and Gabon.

He has held several positions of responsibility in the administration of his country. At the time of his appointment to AU-IAPSC, he was Director General of the National Rural Development School, Oyem.

In the course of his career, he became affiliated to international organizations:

Member of the Réseau du Safoutier de l'Afrique Centrale (Central African Plum Network), in conjunction with the Experts of IRAD-Cameroon.
Member of the Bureau of Genetic Resources (France).
Member of the International Union for the Protection of New Varieties of Plants (UPOV).
Member of the OMPI "Phytoma" Review.
Member of the Chemical Weapons Convention.
Member of the West and Central African Phytosanitary Council.
FAO Plant Health Inspector.
National Expert and Consultant on the Stockholm Convention on Persistent Organic Pollutants (POPs).
National UNIDO Consultant on the Implementation of Regional Agriculture Industrialization Policies.
Former Designated National Authority for the Rotterdam Convention.
Former Member of the National WTO Committee for the implementation of SPS/TBT Agreements.
Former FAO Consultant on Virology "Plant Health Programme" (Gabon).
Lecturer in Plant Health at the National School of Forestry and Water Management of Gabon.

This is a brief description of the man who has been assigned by the African Union Commission to implement the new African Union phytosanitary policy, as defined at the Heads of State Summit in Maputo, Mozambique in 2002, and in keeping with the NEPAD strategy.

Nouveau Directeur du CPI

MEZUI M'ELLA Jean Gérard
CPI Directeur

Le tout nouveau Directeur du CPI, Jean Gérard MEZUI M'ELLA est de nationalité gabonaise. Né le 28 Novembre 1962 au Gabon, il marié et père de 10 enfants.

Mr MEZUI M'ELLA est un Ingénieur Agronome, Inspecteur Phytosanitaire. Titulaire entre autres d'un certificat d'Etudes Approfondies en Sciences Agronomiques, option Protection des végétaux à la Faculté des Sciences Agronomiques de Gembloux (Belgique).

Ses études universitaires ont été confortées par une demi-douzaine de stages réalisés dans différents pays dont la France, la Belgique, le Japon, le Cameroun et le Gabon.

Il a occupé tour à tour plusieurs postes de responsabilité dans l'administration de son pays. Au moment de sa nomination à l'UA-CPI, il occupait le poste de Directeur Général de l'Ecole Nationale de Développement Rural d'Oyem.

Au cours de sa carrière, il a eu l'opportunité d'être affilié aux organisations internationales. Entre autres l'on peut retenir :

Membre du réseau du Safoutier de l'Afrique Centrale en collaboration avec les Experts de l'actuel IRAD-Cameroun.
Membre du Bureau de ressources Génétiques (France).
Membre de l'Union pour la Protection des Obtentions Végétales (UPOV).
Membre de la Revue « Phytoma » ; de l'OMPI.
Membre de la convention sur les Armes Chimiques.
Membre du Conseil Phytosanitaire des pays de l'Afrique de l'Ouest et du Centre.
Inspecteur phytosanitaire de la FAO.
Expert et Consultant National de la Convention de Stockholm sur les POPs.
Consultant National ONUDI pour la mise en œuvre des politiques d'intégration régionale en matière d'industrialisation de l'Agriculture.
Ancienne Autorité Nationale Désignée de la convention Rotterdam.
Ancien membre du Comité National de l'OMC dans la mise en œuvre des Accords SPS/OTC.
Ancien Consultant de la FAO en matière de Virologie « Programme de Protection des Végétaux » (Gabon).
Professeur, chargé des cours de phytopathologie, d'entomologie et de législation phytosanitaire à l'Ecole Nationale des Eaux et Forêts du Gabon.

Voilà en raccourcit l'homme qui est désormais chargé par la Commission de l'Union Africaine de mettre en œuvre la nouvelle politique de l'Union Africaine en matière de protection des végétaux, telle que définie au Sommet des Chefs d'Etats à Maputo, Mozambique en 2002 et suivant la stratégie du NEPAD.

New Senior Scientific Secretary, Phytopathology

Professor Jean-Baptiste BAHAMA

The Professor Jean-Baptiste BAHAMA has been appointed at AU/IAPSC since 4th May 2008 as Senior Scientific Secretary, Phytopathology. Dr. Bahama is Burundian, born ni 1963, married with 5 children. He worked as Rector of Lake Tanganyika University.

EDUCATION

- PhD in Agricultural science and biological engineering (plant pathology). Université Catholique de Louvain (UCL), Unité de Phytopathologie, Oct.1991-March 1996.
- Msc in Tropical and Sub-tropical agriculture. UCL, Phytopathologie, Sept.1990-sept.1991.

Engineer degree in Agricultural sciences. University of Burundi, 1983/84-1989.

ADDITIONAL KEY QUALIFICATION

- Certificate of the International course on «identification of fungi of agricultural and environmental significance». 1998, CABI BIOSCIENCE, United Kingdom.
- Certificate of Plant Virology. 1998, IITA Ibadan, Nigeria.
- Dec. 1990-feb. 1991: training course at Montpellier (CIRAD), laboratory of Plant Pathology

WORK EXPERIENCE AND SKILLS

- Practical experience of plant pathology in the field as well as in laboratories as scientist, lecturer (Burundi and Rwanda) and consultant for various international organizations and projects (FAO, UNDP, IFAD, WB, etc);
- Experience in research-development;
- Managerial experience: prior to joining AU/IAPSC, Prof. Jean-Baptiste BAHAMA has been Dean of the Faculty of Agriculture at the University of Burundi and Rector of the Lake Tanganyika University.
- Computer literacy and good communication either in French and English

Nouveau Secretaire Scientifique Principal , Phytopathologie

Professor Jean-Baptiste BAHAMA

De nationalité Burundaise, le Professeur Jean-Baptiste BAHAMA occupe le poste de Secrétaire Scientifique Principal Phytopathologue (SSP-P) depuis le 04 mai 2008.

QUALIFICATIONS

* Le SSP-P au CPI a fait de brillantes études en agronomie à l'Université du Burundi (ingéniorat en Agronomie Générale en 1989) et à l'Université Catholique de Louvain en Belgique (Maîtrise en Agronomie Tropicale et Subtropicale et Doctorat en Sciences Agronomiques et Ingénierie Biologique, option Phytopathologie en 1996).
* Il a en outre suivi avec succès des formations certificatives de courte durée dans des domaines variés:

Certificat du cours international intitulé «Identification of Fungi of Agricultural and Environmental Significance». 1998, CABI BIOSCIENCE, Royaume-Uni.

Certificat de stage en virologie. 1998, IITA Ibadan, Nigeria.

Stage à Montpellier (CIRAD), laboratoire de Phytopathologie, 1991.

COMPETENCES PROFESSIONNELLES

* Avant de venir au CPI, le Professeur BAHAMA a eu une longue carrière en phytopathologie comme chercheur (Institut des Sciences agronomiques du Burundi), comme enseignant à la Faculté d'Agronomie des Universités du Burundi et du Rwanda et comme consultant pour différents organisations internationales et projets (FAO, PNUD, Banque Mondiale, FIDA, etc).

* Le nouveau SSP-P a en outre occupé des postes de responsabilité : Doyen de la Faculté d'Agronomie et Recteur de l'Université du Lac Tanganyika (2ème grande université de son pays) pendant 5 ans.

* Nanti de cette expérience professionnelle, il n'y a pas de doute qu'il assumera ses nouvelles fonctions avec compétence et que l'agriculture africaine y trouvera son compte.

SITUATION ACRIDIENNE ET AVIAIRE EN AFRIQUE
(Avril à Juin 2008)

ZAFACK Joseph
Chargé du suivi des activités des Acridiens et Oiseaux Granivores en Afrique

D'Avril à Juin 2008, la situation du criquet pèlerin (*Schistocerca gregaria*) s'est graduellement améliorée dans la région Est de l'Afrique où l'acridien était persistant depuis Avril 2007. Alors qu'à cette veille de la période prévisionnelle de reproduction estivale, des manifestations de petite importance s'observent dans la région occidentale.

Par contre, en Afrique Australe, le criquet nomade (*Nomadacris septemfasciata*) résurgent n'accorde aucun répit aux équipes nationales de lutte antiacridienne et plus particulièrement à l'Organisation Internationale de lutte contre le criquet nomade en Afrique Australe et Centrale (IRLCO-CSA).

Le travailleur à bec rouge (*Qelea-quelea*) ne désemplit pas, toute l'Afrique sub-saharienne paye le prix de leur présence dans les exploitations céréalières.

La situation du criquet pèlerin

Les pays africains des côtes de la Mer Rouge et ceux de la corne de l'Afrique ont connu une amélioration progressive de la situation acridienne durant la période d'Avril à Juin 2008. Les récentes prospections réalisées en Juin révèlent une situation globalement calme au **Soudan**, **Ethiopie** et **Egypte**. Les prospections ont tout simplement été arrêtées dans d'autres pays, tels que la **Somalie** et **Djibouti**.

Une augmentation des effectifs acridiens a été constatée au mois d'Avril en **Algérie** où des larves solitaires et transiens, ainsi que des ailés solitaires ont formés de petits groupes de 5 larves au mètre carré et 3 000 ailés à l'hectare au nord-ouest de Tamanrasset. 1 150 hectares ont été traités contre cette tentative de recrudescence. La courbe représentative des effectifs de criquet pèlerin est restée croissante entre Mai et Juin dans la zone algérienne du centre du Sahara où les densités sont passées de 500 à 800 ailés à l'hectare, malgré les 1 330 hectares traités au cours des deux mois.

A la veille de la période prévisionnelle de reproduction estivale, la situation relative au criquet pèlerin ne laisse transparaître aucune menace de recrudescence dans ses traditionnels foyers grégarigènes du Sahel. Les prospections doivent toutefois être maintenues dans le Sahel en général et plus particulièrement dans **les pays de la ligne de front** où les conditions climatiques deviennent de plus en plus favorables à la résurgence de l'acridien.

La situation du criquet nomade

La situation relative du criquet nomade a été déclarée particulièrement préoccupante dans ses aires de reproduction et d'invasion de l'Afrique Australe et Centrale par l'IRLCO-CSA, (Coordonnateur de la lutte antiacridienne dans cette sous région).

La plaine du lac Chilwa au **Malawi** a enregistré des densités de l'ordre de 30 à 40 individus au mettre carré sur un total de 5 000 hectares à traiter. L'usage de Biopesticides y est nécessaire pour éviter l'empoisonnement des eaux du lac par les pesticides chimiques.

La plaine Dimba au **Mozambique** a connu la première infestation de son histoire en Mai 2008. L'on y a enregistré des densités envoisinant les 30 à 50 individus au mettre carré. Plus de 40 essaims observés dans cette plaine ont causé d'importants dégâts sur la culture de sorgho et de maïs.
Une population mixte sautériaux/criquets nomades a été observée dans les plaines de Buzi-Gorongosa au **Mozambique**.

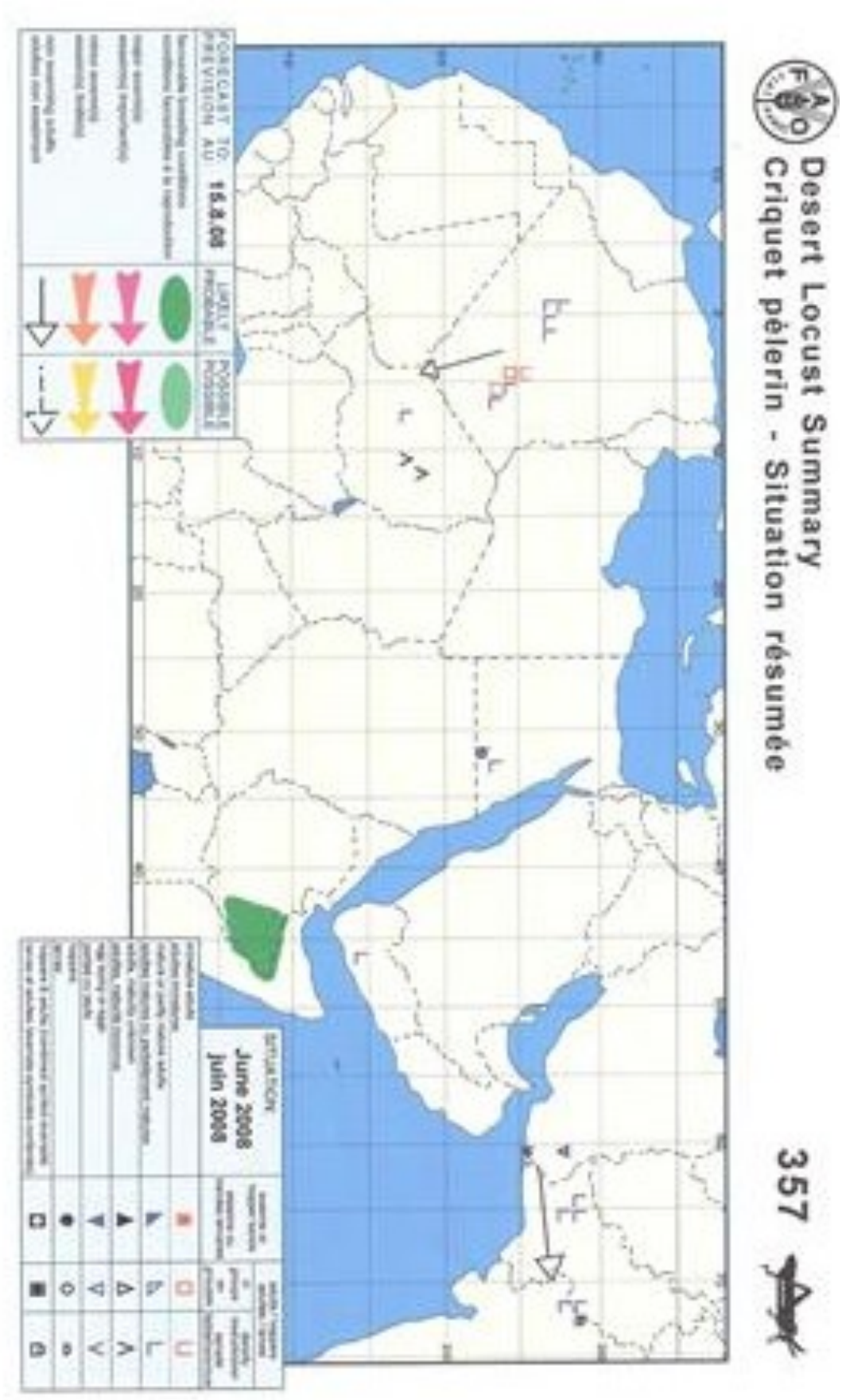
A cause des insuffisances financières dues à la forte pression des acridiens, l'IRLCO-CSA exprime un besoin d'assistance à la lutte contre ce ravageur. Le CPI estime que la possible aide s'orienterait vers la promotion des moyens les plus respectueuses de la santé humaine et animale, ainsi que de l'environnement. Il soutient donc son approvisionnement en biopesticides, destinés aux opérations de lutte dans des sites de reproduction localisés dans ces zones dites d'exclusion, entre les eaux naturelles et les terres continentales dans un environnement où tout traitement chimique serait préjudiciable à la faune aquatique non cible.

La situation du criquet migrateur africain

L'acridien a été signalé dans à la phase solitaire en Avril dans les zones irriguées du Niger, près d'Arlit.

La situation du travailleur à bec rouge

Des colonies de *Quelea-quelea* perchées sur 235 hectares ont été traitées par la Desert Locust Control Organization for Eastern Africa (DLCO-EA) avec la collaboration des services **tanzaniens** de la protection des végétaux. D'autres manifestations de *Quelea-quelea* ont été signalées au mois de Juin à Nyanza et dans la région de la vallée du Rift au **Kenya**.


Desert Locust Summary
Criquet pèlerin - Situation résumée
357
SITUATION
June 2008
Juin 2008
FORECAST TO
PREVISION AU
15.8.08
LIKELY
PROBABLE
POSSIBLE
POSSIBLE

The Phytosanitary situation of Zambia

Nana Sani Flaubert,
Agronomist-Plant pathologist
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African Union, InterAfrican Phytosanitary Council (IAPSC)

Introduction

Zambia is a landlocked country situated between latitudes 8 degrees and 18 degrees south of the equator and latitudes 22 degrees and 33 degrees east. It has a total population of about 11.5 million inhabitants and a total area of over 750,000 km2, consisting mostly of a series of plateaus varying in altitude between 900 m in the west and 1500 m in the east. The climate is a modified three-year season of sudanian type with a warm wet season from mid-November to April, a cool dry season from May to August and a hot dry season from September to April. Mean rainfall tends to increase from 600mm in the south to over 1400 mm in some northern and north-western areas; mean daily temperatures range from around 15 degrees in July to around 32degree in October (1). Strategically it is situated in the southern region of Africa, Zambia shares borders with the Democratic Republic of Congo and Tanzania in the north, Malawi and Mozambique in the east, Botswana, Namibia and Zimbabwe in the south and Angola in the west.

Fig.1: Map of the Republic of Zambia

Zambian Agriculture

The agriculture sector represented 20% GDP in 2000. Agriculture accounted for 85% of total embloyment (2). The agricultural sector of Zambia has accessible cultivatable land to a tune of 42 million hectares with only 14% of arable land currently under utilization. It has an irrigation potential of 500,000 hectares of which only 65,000 hectares is developed. The farming sector composition is made up of small scale farmers who practice subsistence production and grow food crops on a piece of lad ranging from 0.5 to 9 hectares. The emerging farmers practice commercial or subsistence production on the land which areas range between 10 to 20 hectares. The medium scale farmers produce on a big land ranging from 20-60 hectares. They do grow food or cash crops. The large scale or commercial farmers grow cash crops on lands above 60hectares. The major food crops produced are maize, sorghum, cassava, millet and groundnuts. Major cash crops include cotton, tobacco, soybeans, sunflowers, sugarcane and a variety of vegetables (3).

For the regional trade commitments of Zambia, it is a member of the Common Market for Eastern and Southern Africa (COMESA) and also a member of the Southern African Development Community (SADC). The trade agreement among the COMESA countries is that those countries are in a Free Trade Area, which guarantees free movement and trade in goods and services. Zambia ratified the SADC Trade Protocol which put up measures to ensure equitable distribution of the benefits of trade integration for all member states.

Trade and Standards

Fig.2: Sample of Zambians' Maize & Bean

Standards play a key role in facilitating trade and development and in enabling countries to achieve objectives related to human health, environmental protection, and agricultural productivity. Primary producers and subsequent processors and traders who cannot meet regulatory and/or commercial requirements may endanger consumers, fail to access particular markets, and /or be unable to sustainable and profitably compete in those markets. For country like Zambia that aspires to diversify its trade into higher value or value-added Agro-food and light manufactured products, there are growing challenges related to compliance with food safety, agricultural health, environmental, and /or other standards being applied by trade partner governments and /or private sector buyers(10). The Capacities to meet commercial quality requirements as well as comply with ISPM are, increasingly being seen as a core competence for effective participation in international trade. Yet, in many developing countries, there is an "underdeveloped culture" of quality plus only limited or isolated capacities to manage food safety, agricultural health and environmental risks.(11).

Zambia's Ministry of Agriculture and Cooperatives (MACO) has expressed concern that available technical, human, and financial resources are inadequate to enable the sufficient monitoring and management of Sanitary and Phytosanitary (SPS) measures, as demanded by the country's trading partners. To address this concern, MACO has received support from several external partners to strengthen selected capacities, or at least minimize the adverse impacts of breakdowns in SPS management measures. However Zambia should not rely on foreign aid rather should develop political will to tackle the SPS issues to improve its trade with the help of donors' institutions and friendly countries.

Consultations carried out a wide range of discussions with MACO officials and with private sector representatives from various agro-food sub-sectors. The primary purposes of those consultations were to examine SPS management issues within the broader set of competitiveness constraints facing Zambian exports, and to delimit a selected set of capacity building and strategic issues that could be practically addressed.

In the context of trade and standards, Zambia with its extensive natural resource base, has substantial, yet highly underdeveloped potential for agricultural production, processing and trade (9). Historically, agriculture was regarded as a secondary sector, the primary functions of which were to provide a source of food and raw materials and to serve as a sort of population holding station for the 'real' economy. The country is still has to make effort to comply with the International Standards for Phytosanitary Measures (ISPM) within the region. The primary exception to this relates to Zambia's trade with South Africa, although many other factors have also inhibited the competitiveness of Zambian products in the South African market. Zambia has experienced periodic SPS-related problems in its trade of selected products with Europe for the European Good Agricultural Practice (EUROGAP), (4).

Review of the Zambian Food Safety (Zambian Agro-Food Exports)

Concerning the Product Clusters of SPS Importance, Zambia's trade faces relatively few plant health constraints and those that it does are not or should not be binding. Appropriate pest survey, monitoring, inspection, and reporting activities by Zambian agencies could reduce the costs or other effects of existing measures imposed by trading partners. Trading partners express a lack of confidence in official Zambian positions regarding pest status and the integrity of Phytosanitary certification. In policy and practice, Zambian authorities have given special attention to restricting the entry into Zambia of genetically modified maize and related products. Numerous consignments of such products have been denied entry (5).

No other clear prioritization of SPS management in relation to imports is evident. Rather, economic or commercial considerations seem to take precedence. Zambian producer organizations or processors frequently lobby to have imports restricted or delayed, with SPS concerns used as the official pre-text. Several such restrictions have been adopted. Arguably, the biggest challenges faced by Zambia in relation to food safety and agricultural health currently relate to domestic production and the domestic market rather than to the country's trade per se. Although given little priority, Zambia almost certainly faces more significant food safety issues in its domestic market than are associated either with its exports or with its imports. In relation to plant health, perhaps Zambia's greatest challenge is to stem the spread and limit the adverse impact of the larger grain borer beetle on its maize and cassava production and stored crop (8).

The annual crop and financial losses associated with LGB are certainly a large multiple of the 'lost' trade or added compliance costs associated with meeting the Phytosanitary requirements of Zambia's trading partners. While the domestic dimensions of food safety and agricultural health may well be more significant than the trade dimensions, this does not mean that the latter should be ignored. While Zambian exporters have faced few binding market access constraints, there have certainly been experiences of periodic losses due to official or private consignment rejections or price discounts or circumstances where compliance or inspection costs have been non-trivial. Concerns about compliance with food safety or agricultural health requirements have contributed to some patterns of 'defensive commercialization' where firms have simply structured their product mix and market orientations to avert potential compliance problems (7).

There are also several potential threats to Zambia's current trade associated with food safety or agricultural health risks, although in the judgment of the mission, these threats are neither imminent nor of enormous or unmanageable consequence. Several of the recommendations can help addressing current problems, minimizing the risk of future threats, and enabling firms and primary producers to move beyond defensive commercialization' by facilitating improvements in farm/firm management practices to enable them to meet the requirements of more discerning buyers.

Zambian Plant Health

Regarding plant health, an assessment of the Zambian Phytosanitary legislation, institutional structures and capacities, and the experiences in phytosanitary management enable pointing out the operating constraints of the performance of Zambia's national plant protection organization, the Plant Quarantine and Phytosanitary Service within the ministry of agriculture. Findings provide an indication of prevailing strengths and shortcomings. There exists virtually no coordinated national program for pest surveillance (4). Within and outside of the NPPO, there remains little knowledge of the status of the national list of quarantine pests. There is practically no information dissemination within Zambia related to regulated pests. The lack of effective surveillance and up-to-date pest lists, together with minimal capacities to carry out pest risk analysis virtually prevent Zambia from providing a scientific justification for its own phytosanitary measures and weaken its credibility when providing Phytosanitary information to trading partners (6).

Field and border post operations are constrained by insufficient staff training, absence of up-to-date manuals, and lack of effective transport. A poor pay structure and lack of other incentives make it difficult to recruit and retain capable staff. Improving this system will be the application of a number of specific recommendations to the management of PQPS, ZARI, and MACO that are:

PQPS managers should formally designate particular staff to lead or coordinate the performance of specific core of the NPPO functions;

Specific strategies should be developed to increase inter-service and interdepartmental cooperation within ZARI / MACO to achieve the NPPO's objectives (such as national surveys and surveillance for pests); regular performance reviews should be conducted of PQPS performance, using appropriate indicators and involving evaluations by management, staff, Zambian's'clients'and representatives of the NPPO of the country trading partners; and considerations should be given to restructuring of the PQPS as a quasi-independent agency for purposes of staffing, financing, etc., by applying suitable models effectively applied elsewhere.

Other recommendations should be the requiring of the technical assistance, Pest and disease surveys and associated training, document control and preparation of manuals, limited procurement of equipment and services to improve on-going operations. Initiatives should also be undertaken to:

- Design and Initial Implementation of a Zambia Assured Produce Scheme (ZAPS)□□
- Establish & Strengthen Model Food Industries for GMP and HACCP Implementation
- Strengthen Information, Education, Communication and Training Capacity
- Establish and Strengthen Model Inspection Operations.

Laboratory Testing Review

For laboratory testing, an assessment was carried out of the laboratories that are serving the agricultural and food sectors in Zambia, in order to understand Zambia's diagnostic testing capabilities. The main findings of this review include the limited commercial institutions for testing services from within Zambia's agriculture, agribusiness and food service sectors. This included the limited application of formal Hazard Analysis Critical Control Point (HACCP) or other food safety management systems, the lack of domestic pressures for higher standards, the lack of confidence in government and/or university testing, the development of in-house testing capacities among certain leading companies, and reliance on external testing capacities for more complex tests, the lack of coordination or clear division of roles and responsibilities. Government laboratories dealing with food and agriculture fall under four separate ministries, with little overall coordination with respect to division of responsibilities or joint approaches to staff training or equipment procurement /maintenance. There is a severe capacity weakness in most public sector laboratories.

However options to build a better performing and more sustainable system of laboratory testing to support Zambia's agro-food trade and the pursuit and necessary regulatory functions in the management of risks associated with plant pests and food safety contaminants should be set up. A variant of this approach would involve the creation of mini centers / laboratories of excellence in microbial and chemical analysis; both cross cutting areas that would support a variety of food sectors and government regulatory services, the development of co-ordinated programs for equipment procurement, equipment maintenance, and laboratory staff training among the different laboratories and, under the supervision of the Zambian government, the initiation of inter-laboratory testing in critical areas, involving public, university, and private laboratories should be encouraged. This 'vision' on a national laboratory system for Zambia is certainly possible, yet it will not be attained without the adoption of a more coordinated and strategic approach, based on the support, input, and involvement of the government, industry, and the donor community.

Concluding remarks

Finally, Zambia currently possesses quite limited capacities for food safety and agricultural health management. Limited capacities in relation to diseases; noxious weeds and insect pests/food contaminants, surveillance, inspection, risk analysis, and conformity assessment do have adverse effects on domestic agricultural productivity and production as well as on consumer health. It reduces the competitiveness of Zambia's external trade. The government of Zambia has taken measures to cope with or in response to outbreaks of diseases, pest infestations with limited few exceptions. However, it is difficult to identify specific policies and /or pro-active strategies that are being adopted by government to manage SPS-related risks. The country must increase compliance with SPS-related measures and standards to improve access of its agricultural products to the international market.

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Atelier régional sur la communication des dangers chimiques et la mise en oeuvre du Système Général Harmonisé (SGH) pour la région de la CEDEAO, 13-15 Mai 2008 , Abuja- Nigeria

INTRODUCTION

L'atelier de travail régional sur la communication des dangers chimiques et la mise en oeuvre du Système Général Harmonisé de classification et d'étiquetage des produits chimiques (SGH) pour les pays de la région de la CEDEAO a été organisé par le Ministère Fédéral de l'Environnement, de l'Habitat et du Développement Urbain du Nigeria, en collaboration avec l'Institut des Nations Unies pour la Formation et la Recherche (UNITAR), l'Organisation Mondiale de la Santé (OMS), l'Organisation Internationale du Travail (OIT) et la Communauté Economique des Etats de l'Afrique de l'Ouest (CEDEAO), avec le soutien financier des Gouvernements de la Suisse et de l'Allemagne et de l'Organisation pour l'Interdiction des Armes Chimiques (OIAC). L'atelier de travail s'est tenu du 13 au 15 Mai 2008 à l'hôtel Chelsea à Abuja-Nigeria. Il a été précédé d'un séminaire organisé par l'OMS sur les aspects du SGH relatifs au secteur de la santé le 12 Mai 2008 auquel ont participé des représentants des Ministères de la Santé des pays membres de la CEDEAO.

OUVERTURE

L'atelier de travail a été inauguré par S.E. Mme. le Ministre de l'Environnement, de l'Habitat et du Développement Urbain Arc. Halima Tayo Alao. Dans son allocution, Mme le Ministre a souligné l'importance de l'intégration du SGH en tant qu'outil principal et de base pour la protection de l'environnement et des citoyens des effets adverses des produits chimiques dangereux par le biais de la communication appropriée et de la prise de conscience des dangers, le renforcement des partenariats et la cohérence du cadre de travail de la gestion des produits chimiques dans les pays de la CEDEAO, et ce à travers une stratégie de mise en œuvre du SGH et une législation harmonisée sur les produits chimiques compatible avec le SGH, sans oublier un engagement et une implication véritables de la part des quatre secteurs- clés du SGH (la production industrielle, l'agriculture, le transport et les produits de consommation) en vue d'atteindre l'objectif de la mise en œuvre du SGH dans la sous-région de la CEDEAO. Et de noter que les résultats de l'atelier de travail jetteront les fondements d'une stratégie de mise en œuvre du SGH dans la sous-région, y compris un plan d'action pour la coopération régionale parmi les pays de la CEDEAO.

Le Secrétaire permanent du Ministère de l'Environnement, de l'Habitat et du Développement Urbain, M. Otaki M. Oyigbenu, a prononcé un mot de bienvenue. Des messages d'amitié ont également été prononcés par l'Ambassadeur d'Allemagne, représenté par M. Cord Christian Busche ; le Chargé d'Affaires de l'Ambassade de Suisse, M. Fabio Baiardi ; le Commissaire de l'Agriculture, de l'Environnement et des Ressources en Eau- Commission CEDEAO, M. Ousseini Salifou ;

Regional Workshop on Chemical Hazard Communication and GHS Implementation for Countries of the ECOWAS Sub-Region 13-15 May 2008 , Abuja- Nigeria

INTRODUCTION

The Regional Workshop on Chemicals Hazard Communication and implementation of the Globally Harmonized System for Classification and Labeling of Chemicals (GHS) for Countries of the ECOWAS Region was organized by the Federal Ministry of Environment, Housing and Urban Development, Nigeria, in collaboration with the United Nations Institute for Training & Research (UNITAR),World Health Organization (WHO), International Labour Organization (ILO), and Economic Community Of West African States (ECOWAS), with financial support from the Government of Switzerland, Government of Germany, and Organisation for Prohibition of Chemical Weapons (OPCW). The workshop was held from 13-15 May 2008 at the Chelsea Hotel in Abuja, Nigeria. The Workshop was preceded by aWHO Health Sector GHS Seminar on 12 May 2008, attended by representatives of the Ministries of Health from ECOWAS member states.

OPENING

The workshop was declared open by the Honourable Minister of Environment, Housing & Urban Development, Arc. Halima Tayo Alao. In her keynote address, the Honourable Minister highlighted the importance of mainstreaming the GHS as a key and basic tool in protecting the environment and the citizenry from the adverse effects of hazardous chemicals through appropriate hazard communications and comprehensibility; strengthening partnerships and ensuring coherence in chemicals management framework among ECOWAS countries through a GHS implementation strategy and harmonized GHS-compatible chemicals legislation and the commitment and genuine involvement of the four major GHS sectors (industrial production, agriculture, transport and consumer products) in attaining the goal of GHS implementation within the ECOWAS sub-region. She noted that the outcomes of the workshop would provide an implementation strategy for the GHS in the sub-region, including a work plan for regional cooperation among ECOWAS countries.

The Permanent Secretary of the Ministry of Environment, Housing and Urban Development, Mr. Otaki M. Oyigbenu, delivered the welcome address. Goodwill messages were also delivered by the Ambassador of Germany, represented by Mr.Cord Christian Busche; the Charge d'Affaires Embassy of Switzerland, Mr. Fabio Baiardi; Commissioner of Agriculture, Environment and Water Resources, ECOWAS Commission, Mr. Ousseini Salifou; Representative of the Organisation of the Prohibition of Chemical Weapons (OPCW), Ms. Boitumelo Kgarebe; CountryRepresentative of UNIDO, Mr. MasayoshiMatsushita;andRepresentatives of UNITAR, Mr. Jan van der Kolk; WHO, Ms. Joanna Tempowski; FAO, Ms Evelyn A.Yeye; and ILO, Mr. Sunday Izu.

la Représentante de l'OIAC, Mme. Boitumelo Kgarebe ; le Représentant de l'ONUDI dans le pays, M. Masayoshi Matsushita, ainsi que les Représentants de l'UNITAR, M. Jan van der Kolk, de l'OMS, Mme. Joanna Tempowski, de la FAO, Mme Evelyn A. Yeye et de l'OIT, M. Sunday Izu.

Le discours de remerciement a été prononcé par Dr. O.O. Dada, Directeur du Département de Contrôle de la Pollution au Ministère Fédéral de l'Environnement, de l'Habitat et du Développement Urbain.

Ont participé à l'atelier de travail 114 participants de 15 pays de la CEDEAO, y compris des parties concernées des gouvernements, de l'industrie et du milieu des affaires, de la société civile, des universités, des ONG, des medias, des agences des Nations Unies et des organisations de coopération régionales et internationales.

OBJECTIF DE L'ATELIER DE TRAVAIL

L'objectif principal de l'atelier de travail était de développer des recommandations pour une stratégie régionale de mise en œuvre du SGH dans les pays de la CEDEAO et d'adopter un calendrier pour les actions de suivi bien déterminées.

SEANCES PLENIERES/TECHNIQUES

L'atelier de travail a englobé de longues délibérations sur les sujets suivants :

- L'état de mise en œuvre du SGH dans les pays membres de la CEDEAO
- Le rôle de l'industrie, du milieu des affaires, des organisations d'intérêt public et des syndicats dans la mise en œuvre du SGH
- Le développement de stratégies nationales pour la mise en œuvre du SGH
- La mise en œuvre du SGH au niveau régional.

L'atelier de travail a mis en exergue ce qui suit :

i. L'opportunité assurée aux pays membres de la CEDEAO pour partager leurs expériences, leurs succès et les défis nationaux en matière de mise en œuvre du SGH
ii. Le SGH fait partie du Plan d'Action de l'Initiative de l'Environnement du Nouveau Partenariat pour le Développement de l'Afrique (NEPAD)
iii. Les recommandations du Séminaire sur les aspects santé du SGH organisé par l'OMS le 12 mai 2008 relatives aux liens qui existent entre le secteur de la santé et la mise en œuvre du SGH
iv. Le SGH est un outil utile et unificateur pour la mise en œuvre des Accords Environnementaux Multilatéraux (AEM) relatifs aux produits chimiques
v. La mise en œuvre du SGH aux niveaux sous-régional et national permettra de minimiser les impacts préjudiciables à la santé publique et l'environnement qui résultent de la classification incohérente des produits chimiques et de la communication inadaptée des dangers
vi. Les quatre secteurs concernés par le SGH, à savoir les lieux de travail industriels, l'agriculture, le transport et les produits de consommation ont des rôles complémentaires à jouer pour réaliser les objectifs et buts du SGH

The Vote of Thanks was delivered by Dr. O.O Dada, Director of the Pollution ControlDepartment of the Federal Ministry of Environment, Housing and Urban Development.

The Workshop was attended by (114) participants from the fifteen (15) ECOWAS countries, including stakeholders from governments, industry & business,civil society, universities, non-governmental organizations (NGOs), the media, UN agencies, and international and regional cooperation organizations.

WORKSHOP OBJECTIVE

The main objective of the workshop was to develop recommendations for a Regional Implementation Strategy for the GHS in ECOWAS countries, and to determine time-lines for identified follow-up actions.

PLENARY/TECHNICAL SESSIONS

The workshop included extensive deliberations on the following topics:

- Status of National GHS Implementation in the ECOWAS Region
- The Role of Business and Industry, and Public Interest and Labour Organisations in GHS Implementation
- Development of National GHS Implementation Strategies
- Implementation of the GHS at the Regional Level

The workshop noted the following:

i. The opportunity provided for ECOWAS member nations to share national GHS implementation experiences, success stories and challenges;
ii. The GHS is an integral part of the Action Plan for Environment Initiative of the New Partnership for Africa's Development (NEPAD);
iii. Recommendations from the WHO Health Sector GHS Seminar on 12 May 2008 with respect to links between the health sector and GHS implementation;
iv. GHS is a useful unifying tool for implementing chemicals-related Multilateral Environmental Agreements (MEAs);
v. GHS implementation at the sub-regional and national levels will minimize injurious impacts to public health and the environment, arising from incoherent chemical classification and hazard communication;
vi The four GHS sectoral players industrial workplaces, agriculture, transport and consumer products have integrative roles in the realization of GHS goals and targets;
vii. Effective legislative and administrative frameworks are central to successful GHS implementation and where there are existing structures, they could be adapted, amended, enhanced and integrated for the GHS;
viii. GHS implementation requires adequate and sustainable funding;

vii. Les législations et les cadres de travail administratif efficaces jouent un rôle essentiel dans la mise en œuvre réussie du SGH. Lorsque ces structures existent, elles peuvent être adaptées, amendées, renforcées et intégrées pour le SGH

viii. La mise en oeuvre du SGH nécessite un financement adéquat et durable

ix. Les défis en matière de mise en œuvre du SGH englobent les lois fragmentées sur les produits chimiques, de faibles niveaux de prise de conscience parmi le public, la pauvreté, l'absence de données, une faible coordination/ coopération entre les parties prenantes sectorielles et de faibles mécanismes de mise en œuvre.

x. Il existe des cas très connus d'empoisonnement résultant d'une mauvaise connaissance des produits chimiques, comme les pesticides et les fertilisants

xi. Bien que la date limite pour la mise en œuvre du SGH soit 2008, les étapes de mise en œuvre du programme dans la sous- région diffèrent d'un pays à un autre

xii. Certains pays ont besoin de soutien technique et financier pour lancer le programme

xiii. La participation de l'industrie, des groupes d'intérêt public et des medias dans la conscientisation au SGH est louable mais les efforts doivent être intensifiés

xiv. Il est nécessaire de renforcer les mécanismes institutionnels existants pour la collecte et l'échange d'informations

xv. Il est important de renforcer la sensibilisation et la prise de conscience parmi les parties concernées et le public en général

xvi. La nécessité d'établir un conseil offrant des procédures harmonisées pour l'homologation des produits chimiques pour la région de la CEDEAO, englobant les parties concernées

RECOMMANDATIONS

Les participants à l'atelier de travail ont discuté de la stratégie régionale de mise en oeuvre du SGH qui devrait être adoptée par les pays membres et ont formulé les recommandations suivantes :

Actions Régionales

i. Charger le Secrétariat de la CEDEAO d'assurer les conseils et la coordination pour la mise en œuvre régionale du SGH

ii. Etablir des Comités Régionaux Techniques pour coordonner toutes les activités de mise en œuvre du SGH

iii. Renforcer la coopération nationale et régionale pour une mise en œuvre commune du SGH à travers la formulation et l'application de législations communes portant sur la mise en œuvre du SGH qui seraient approuvées par le Conseil des Ministres de la CEDEAO

iv. Promouvoir la coopération, la collaboration et l'échange d'informations parmi les agences gouvernementales et les secteurs pertinents

v. Se baser sur les efforts pertinents qui existent dans la région, notamment le Plan d'Action du NEPAD pour l'Environnement et coordonner ces efforts

vi. Promouvoir la participation active des organisations régionales, y compris la Commission de la CEDEAO, le CILSS et le Centre Régional de Coordination de la Convention de Bâle, comme ceci est nécessaire

ix. Challenges in GHS implementation include fragmented chemical laws, low levels of public awareness, poverty, paucity of data, poor coordination/collaboration among relevant sectoral stakeholders, and poor enforcement mechanisms;

x. There are well known cases of poisoning arising from poor knowledge of chemicals such as pesticides and fertilizers;

xi. Although the target date for GHS Implementation is 2008, programme execution in the sub-region is at different stages of implementation;

xii. Some member nations require technical and financial support to commence the programme;

xiii. The involvement of industry and public interest groups and the media in promoting awareness on GHS is laudable but efforts need to be intensified;

xiv. The need to strengthen existing institutional mechanisms for information collection and exchange;

xv. The need to strengthen awareness and sensitization among all stakeholders and the general populace;

xvi. The need to establish a harmonized ECOWAS Chemicals Registration Board comprising relevant stakeholders.

RECOMMENDATIONS

The workshop deliberated on the Regional Strategy for the Implementation of the GHS for adoption by member countries, and recommended as follows:

Regional Actions

i. The ECOWAS Secretariat should provide guidance and coordination in the regional implementation of GHS;

ii. Establishment of Regional Technical Committees to coordinate all GHS implementation activities;

iii. National and regional cooperation should be strengthened for joint GHS implementation through formulation and enactment of common GHS implementing legislation to be approved by the ECOWAS Council of Ministers;

iv. Cooperation, collaboration and information sharing should be strengthened among relevant government agencies and sectors;

v. Build upon and coordinate with relevant existing efforts in the wider region, such as the NEPAD Plan of Action on the Environment;

vi. Active engagement of regional organizations including the ECOWAS Commission, CILSS, and the Basel Convention Regional Coordinating Centre, as appropriate;

vii. Establishment of a Harmonized Chemicals and Pesticides Registration System for the ECOWAS region;

viii. Strengthen the links between GHS, SAICM, MEAs and MDGs activities and efforts;

vii. Etablir un système harmonisé pour l'homologation des produits chimiques et des pesticides dans la région de la CEDEAO
viii. Renforcer les liens entre les activités et efforts relatifs au SGH, à l'Approche Stratégique de la Gestion Internationale des Produits Chimiques (SAICM), aux Accords Environnementaux Multilatéraux (AEM) et aux Objectifs du Millénaire pour le Développement (OMD)
ix. Promouvoir la communication avec la communauté internationale au sujet des questions relatives au SGH dans la sous- région (à titre d'exemple, avec le Sous-Comité d'Experts du Système général harmonisé de classification et d'étiquetage des produits chimiques (SCESGH)

Actions nationales

i. Etablir des Comités Nationaux Techniques pour coordonner toutes les activités de mise en œuvre du SGH
ii. Assurer un financement adéquat à travers des affectations budgétaires assurées par les gouvernements et un soutien financier de la part du milieu des affaires, de l'industrie, des ONG et des agences de bailleurs de fonds
iii. Intégrer la gestion des produits chimiques aux programmes nationaux de planification et de développement
iv. Intensifier les programmes nationaux de sensibilisation, de formation et de conscientisation, à travers la participation active des décideurs politiques, des medias et des groupes d'intérêt public
v. Renforcer les capacités de toutes les parties concernées en vue de garantir une participation effective à la mise en œuvre du SGH
vi. Etablir des centres anti-poison, des centres d'informations et des centres d'intervention en cas d'urgence bénéficiant de l'équipement et de la logistique nécessaires
vii. Renforcer les arrangements institutionnels existants pour la collecte et la dissémination d'informations sur les produits chimiques, y compris la formation et la coopération institutionnelle au sein de la région (à l'instar de l'échange d'expériences sur le contrôle des poisons et des centres d'information)
viii. Renforcer les liens entre les activités et efforts relatifs au SGH, à l'Approche Stratégique de la Gestion Internationale des Produits Chimiques (SAICM), aux Accords Environnementaux Multilatéraux (AEM) et aux Objectifs du Millénaire pour le Développement (OMD).

CLOTURE

Les participants à l'atelier de travail ont exprimé leur profonde gratitude à l'UNITAR, à l'OMC et aux parrains de cet atelier de travail, notamment les gouvernements de Suisse et d'Allemagne et l'OIAC. Ils ont également remercié S.E. Mme le Ministre de l'Environnement, de l'Habitat et du Développement Urbain, Arc. Halima Tayo Alao de son appui et des efforts déployés en vue d'organiser cet atelier de travail. Les organisateurs ont exprimé toute leur appréciation aux participants pour leur engagement, soutien et coopération assurés tout au long de l'atelier de travail en vue de déterminer tous les éléments d'une stratégie régionale de mise en œuvre qui contribuerait efficacement à la mise en œuvre du SGH dans la sous- région.

ix. Further communication with the international community on GHS issues in the Sub-region (such as with the UN-SCEGHS).

National Actions

i. Establishment of National Technical Committees to coordinate all GHS implementation activities;
ii. Adequate funding should be provided through budgetary allocations by governments and financial support from business/industry, NGOs and donor agencies;
iii. Chemicals management should be integrated into National Planning and Development Programmes;
iv. National awareness raising, training, and sensitization programmes should be intensified, through active participation by policy makers, as well as the media and public interest groups;
v. Capacity building of all relevant stakeholders should be strengthened for effective participation in GHS implementation;
vi. Poison control and information centres and chemical emergency response centres, backed with necessary equipment and logistics should be established;
vii. Strengthening of existing institutional arrangements for information gathering and dissemination on chemicals, including training and institutional cooperation within the region (such as sharing of experience on poison control and information centres);
viii. Strengthen the links between GHS, SAICM, MEAs and MDGs activities and efforts.

CLOSING

The workshop expressed profound appreciation to UNITAR, the WHO and sponsors of the workshop, the Governments of Switzerland and Germany and the OPCW. The workshop also thanked the Honorable Minister, Federal Ministry of Environment, Housing & Urban Development, Arc. Halima Tayo Alao, for her support and effort in organizing the workshop. The organizers expressed appreciation to all the participants for their commitment, support and cooperation during the workshop in ensuring the emergence of elements of a Regional Implementation Strategy that would be effective in the overall implementation of GHS within the sub-region.

ADOPTION OF THE COMMUNIQUÉ

This Communiqué was adopted on Thursday 15th May 2008 at the Harmony Hall of the Chelsea Hotel in Abuja, Nigeria. The adoption of the Communiqué was moved by Sam Adu Kumi of Ghana.

Stored Product insects

Dr. Abdel Fattah Mabrouk Amer
Senior Scientific Secretary, Entomologist, African Union

Introduction

Stored-product pests are usually brought into the home in an infested package of food. Initially, infestations are easy to overlook because the insects involved are quite small, especially in the egg and larval stages. Often the first indication of the infestation is the appearance of small moths flying about or the presence of beetles in or near the food package

The most common insects infesting food in the home are in the insect orders Lepidoptera or Coleoptera. Adult moths and adult beetles are easy to distinguish from each other, but their larvae are a little more difficult to identify. Beetle larvae are either grub -like and legless or have only three pairs of legs, all located close to the head. Moth larvae have three pairs of true legs, plus additional leg-like structures further down the abdomen. Both larvae and adults of beetles feed on foodstuffs, whereas only the larval stage of moths consumes stored products.

MEAL MOTHS

Indianmeal Moth, *Plodia interpunctella* (Hübner)

The most common species of meal moths found in the home pantry is the Indianmeal moth, *Plodia interpunctella*. All damage is done by the larvae, which attack a wide range of products, including cereal and cereal products, flour, cornmeal, rice, dried fruit, dehydrated vegetables, nuts, chocolate, graham crackers, dried red peppers, pastas and other confections. When infestations are heavy, mature larvae can often be found in parts of the house far from the original food source because they move quite a distance to pupate.

General Description (Identification)

Adults are attracted to light and may move to distant rooms in the house away from the infestation. They are about 10mm long when at rest and have a wing spread of about 20mm. The forewings of this moth are reddish brown with a copper sheen on the outer two thirds and gray on the inner third. At rest the wings are held roof-like over the body. The head and thorax of the moth appears gray and the posterior brown, with a coppery sheen. The mature larvae about 12.5mm, and have five pairs of well developed prolegs that help them move considerable distances to pupate. The larvae pupate either in a silken cocoon or unprotected. The pupae are about 11 mm and are pale brown in color. Eggs are grayish white and range in length from 0.3 to 0.5mm long.

Life cycle

Eggs

After mating, a female lay about 400 eggs. The eggs can be laid singly or in clusters, and are generally oviposited directly on the larval food source. The eggs hatch in seven to eight days at 20° C and three to four days at 30° C. Upon hatching, the larvae begin to disperse and within a few hours can establish themselves in a food source. The larvae can complete their development in six to eight weeks at temperatures from 18 to 35° C. The number of larval instars varies from five to seven. The pupal stage can last from 15 to 20 days at 20° C and seven to eight days at 30° C.

The female moth lays between 60 and 300 eggs, singly or in clusters, on or near the foodstuffs. Eggs hatch in 2 to 14 days with larvae or "tiny whitish caterpillars" dispersing within a few hours. Larvae move to foodstuffs, and feed in or near a tunnel-like case of frass and silk which they web together. Some food becomes matted with silken webbing. The larval stage is the feeding or "pest stage," and may range from 2 to 41 weeks, depending on the temperature. In stored grains, feeding is done at the surface. When ready to pupate, mature larvae leave their tubes and spin a silken cocoon. They often migrate or "wander" a considerable distance from their food source before finding the pupation site, often in cracks and crevices. Some crawl up walls to where the wall and ceiling meet or crawl to the top of the cupboard to spin the cocoon in which they pupate and from which new adult moths emerge. Mating occurs and the life cycle is repeated. The life cycle may range from the shortest period of four weeks to the longest of 300 days. Under good conditions, the entire life cycle requires six to eight weeks. However, in cold climates, larvae overwinter and pupate in March. Moths emerge in April. Generations overlap as the season progresses. There may be five generations per year in some locations. The life cycle depends on temperature, taking two to six months in temperate zones and three to four weeks in warm climates.

Damage

Close-up of a nut infested with Indian moth

The larvae are surface feeders. Most of the "damage" to stored products occurs when the larvae spin massive amounts of silk that accumulate fecal pellets, cast skins, and egg shells in food products. The damage to stored products due to this contamination exceeds the amount of food eaten by the insects. Homeowners and managers of food processing plants, warehouses, groceries and granaries should be alert for signs of infestation.

Biological Control

Both the larval parasite, *Bracon hebetor* (Hymenoptera: Braconidae) and the egg parasite, *Trichogramma pretiosum* (Hymenoptera: Trichogrammatidae) have demonstrated moth population suppression. When the parasites were used in combination, an 84.3 % suppression was observed. *T. pretiosum* acting alone offered a 37.3 % suppression rate while *B. hebetor* provided a 66.1 % suppression rate.

Control Measures

1. Before purchasing, examine foods such as milled cereal products, flour and dried fruit for infestations. Examine broken and damaged packages and boxes to avoid bringing stored pests accidentally into the home. Check the packaging date to ensure freshness.
2. Purchase seldom-used foods in small quantities to prevent long storage periods of a month or more. Susceptible material stored for six months or more, especially during the hot summer months, has the possibility of developing into serious infestations. Store susceptible foods in insect-proof containers of glass, metal or plastic ware with tight-fitting lids, ideally screw-type. Highly susceptible foods, such as spices, can be kept in the refrigerator and other foods in the freezer. Always use older packages first, and inspect frequently to avoid any spillage which might attract insects. Properly ventilate the storage area to discourage moisture-loving pests.
3. Foods of questionable infestations or even lightly infested can be supercooled or superheated. Place exposed or suspect foods in a freezer at 0°F. for four to seven days or in a microwave oven for five minutes or in a shallow pan or tray in the oven at 140°F for one hour or 120°F for two hours. Spread the material thinly to permit effective cold or heat penetration to kill all life stages of the pest. If in the oven, stir food periodically to prevent possible scorching. Dried fruits can be placed in cheese cloth bags and dipped into boiling water for six to ten seconds to kill external pests. However, seeds saved for planting may have the germination reduced after superheating or cooling. Sifting the food material will remove possible insect fragments and any remaining will not cause harm if consumed. After insects are killed, contaminated food might be used outdoors during winter months for bird feed.
5. Locate the source of infestation and quickly get rid of it. Dispose of heavily infested foods in wrapped, strong, plastic bags or in sealed containers for garbage disposal service or bury deep in the soil if permitted and practical. If detection is made early, it may be the only material infested and the problem is solved. Be sure to carefully examine seldom-used foods, especially in least disturbed storage areas. One can spread suspected foods on a tray to determine whether infestation is widespread. Inspect unopened cardboard boxes since pests can chew into these boxes and plastic inserts.
6. Pheromone traps are commercially available for inspection, monitoring, and pinpointing infestations of adult Indianmeal moths. Insects use pheromones to communicate with each other, and are natural compounds created in the insect body. Many have been isolated in the laboratory and now used to lure insects into sticky traps.

   Adult moths live only five to seven days with their major function to reproduce. Male moths are attracted to pheromone scent (sex-attractant). Traps can be hung indoors next to the ceiling, behind shelves, etc. to capture moths on a sticky board. In food warehouses, some use five traps per 1,000 square feet. A few well-placed traps (about $6.00 each) can detect moths. About one in eight Indianmeal moths that approach a pheromone trap enters it. The trap alone is a "monitoring tool" not a control method.
7. The use of insecticides is discouraged around food materials. However, aerosol sprays of synergized pyrethrins, labeled for this use, will control nuisance moths flying around rooms. (Follow label directions and safety precautions). If the problem becomes severe and widespread, contact a reputable, licensed pest control operator who has the training, experience, equipment, and insecticides to get the control job accomplished.

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Le Bunchy Top du bananier: symptômes et stratégies de lutte

Dr. Bahama Jean-Baptiste
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African Union

Introduction

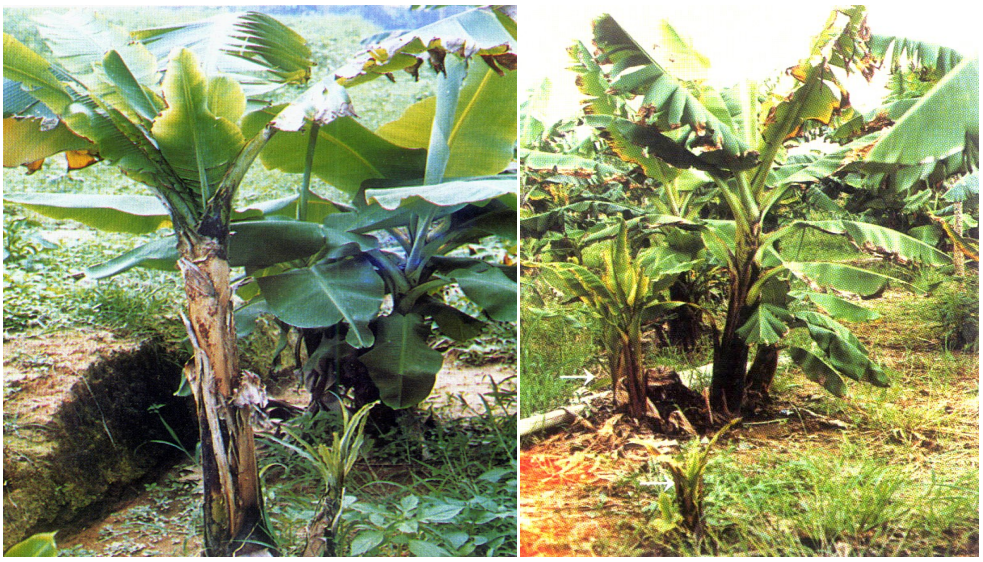
La banane est l'un des aliments de base dans la plupart des pays de l'Afrique Centrale, Afrique de l'Ouest, l'Afrique de l'Est et du Sud.

Sa production est cependant régulièrement compromises par pas mal de contraintes phytopathologiques dont principalement la Sigatoka noire, la maladie de Panama, les flétrissements fongiques et bactériens et les viroses. .

Parmi les viroses, le Bunchy top est le plus dommageable. Ce virus est connu depuis longtemps. Il a été décrit pour la première fois en 1889-1890 aux îles Fidji. Depuis, le virus a été disséminé dans les autres régions : Ceylan, Australie, Inde et est arrivé en Afrique dès 1958. La maladie est également présente dans les îles Hawaï depuis 1995.

La maladie est disséminée par le matériel de plantation (rejets et vitroplants) et un puceron vecteur, *Pentalonia nigronervosa*. C'est principalement par les rejets que la maladie est disséminée à longue distance. Lorsqu'un rejet est infecté, toute sa descendance l'est aussi et ne donne les fruits que très rarement. Ainsi, une fois que la maladie est installée, il devient extrêmement difficile de le contenir et de l'éradiquer. Par conséquent, le Bunchy Top du bananier a un effet dévastateur sur la production.
Bien que connue depuis longtemps en Afrique, la maladie n'a pris une allure inquiétante que récemment, probablement avec le recours à la multiplication rapide in vitro. Ainsi, la maladie prend de plus en plus d'importance dans les pays de l'Afrique Australe et Centrale alors que la situation dans les autres régions n'est pas bien connue.

C'est dans le souci de limiter la dispersion de la maladie que cet article est publié dans ce bulletin. Il résume les symptômes de la maladie, la dispersion et le développement de la maladie ainsi que les mesures de contrôle appliquées avec succès ailleurs.



Symptômes du bunchy top sur rejets de bananier

Les symptômes typiques de la maladie s'observent sur les feuilles. Celles-ci sont plus petites avec souvent des bordures chlorotiques et enroulées. Elles deviennent plus dures et plus érigées que les feuilles normales. Elles forment une touffe à l'extrémité en forme de rosette d'où le nom de bunchy top. Les plants infectés présentent un nanisme prononcé (photos plus haut).

Sur les plants infectés tardivement dans le cycle de culture, le symptôme visible peut être quelques stries vert-foncé à l'extrémité de la bractée florale.

Les rejets d'une souche infectée manifestent des symptômes sévères dès l'apparition de la première feuille émise et ont un nanisme plus prononcé.

Développement de la maladie

Le virus du Bunchy Top se comporte comme un parasite obligatoire et effectue son cycle de multiplication dans la plante hôte. Il se localise dans le phloème des plants infectés à partir duquel il se déplace du point d'inoculation vers les autres organes.

Les rejets produits à partir d'une souche infectée en général développent des symptômes avant d'atteindre leur maturité.
La dissémination sur longue distance est assurée par le mouvement de toutes les formes végétatives du matériel utilisé pour la plantation incluant les rejets et les vitroplants.

Sur courte distance, la dissémination se fait par le puceron, *Pentalonia nigronervosa*, à partir de foyer d'infection. *P. nigronervosa* est la seule espèce d'insecte vecteur du BBTV et même le seul puceron vecteur. Une durée d'alimentation du puceron d'au moins quelques heures sur une plante infectée est nécessaire pour acquérir efficacement le virus. Au bout d'environ un jour le puceron est capable de transmettre le virus tout le reste de sa vie (environ 6 semaines). Le virus ne passe pas dans sa descendance.

Le virus du Bunchy Top infecte aussi les plantes ornementales du genre *Canna*.

Lutte contre le BBTV

La lutte contre le Bunchy Top du bananier repose en premier lieu sur l'adoption de mesures culturales qui permettent d'éviter ou de minimiser les infections virales. Ces mesures comprennent :

- La quarantaine pour éviter l'introduction du virus dans les zones où il n'existe pas encore;
- L'interdiction d'échange de rejets entre régions;
- L'utilisation d'un matériel de plantation indemne de virus notamment les vitroplants (les méristèmes doivent provenir de plants mère indexés pour le virus);
- L'installation de nouvelles plantations loin de plantations plus anciennes, infectées ;
- L'extraction et destruction de plants infectés et ceux de leur voisinage;
- Il n'existe pas jusqu'à ce jour de cultivar résistant au Bunchy top;
- Le traitement insecticide contre le puceron réduit le nombre de pucerons à court terme mais n'assure pas un contrôle satisfaisant à plus long terme ;
- La création de zones tampons ou de brise-vent autour des plantations de bananier.

Il est également important de bien surveiller les zones plantées de bananiers pour repérer à temps l'apparition de la maladie et procéder à l'application de l'une ou l'autre méthode de lutte.

Pour le cas de l'Afrique, il urgent de mener une enquête rapide dans les régions productrices de banane (Afrique Centrale, Afrique de l'Ouest, Afrique de l'Est et Afrique australe) afin d'établir une carte de distribution de la maladie. Cela suppose une bonne collaboration des organisations nationales de protection des végétaux avec le CPI. Les Communautés Economiques Régionales concernées devraient organiser des séminaires d'échange d'information et élaborer des stratégies concertées de lutte contre la maladie.

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EAST AFRICA PHYTOSANITARY INFORMATION COMMITTEE FOURTH MEETING, COMESA HEADQUARTERS, LUSAKA, ZAMBIA, APRIL 21-25, 2008

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Introduction

The 4th meeting of East Africa Phytosanitary Information Committee was held at the COMESA Headquarters of Lusaka-Zambia. Fifty one (51) participants from North Carolina State University and the Centre for Integrated Pest Management (NCSU-CIPM): the United State Department of Agriculture -Animal and Plant Health Inspection Service (USDA / APHIS), USDA; FAO, Rome; AU-IAPSC, Cameroon; CABI Africa and CABI, UK; and 13 other african countries: Botswana, Burundi, Ethiopia, Ghana, Kenya, Liberia, Mozambique, Namibia, Rwanda, Sénégal, South Africa, Tanzania and Zambia attended the meeting. The objectives of this initiative include the following:

- Establish and making a sustainable network for the EAPIC,
- Train participants on Phytosanitary Management Information Systems and Global Information system,
- A server donation to the Zambian Agricultural Research Institute (ZARI),
- Stakeholders making Presentations on their institutions

The agenda of the meeting presented to the participants was adopted.

Opening of the session

The Welcome cocktail was given to participants at the Pamodzi Hotel, Lusaka by the organizers in the evening at the eve of the opening session. On the opening session, the Chairperson of EAPIC made her welcome remarks which highlighted that the meeting was coming up after those of Kenya, Tanzania and Uganda.

Dr. Mwila, Director – COMESA IPPSD welcomed delegates in his welcome speech. He gave a brief of COMESA's activities; highlighting the Agricultural Marketing Promotion and Regional Integration Project (AMPRIP), which is under the Division of Investment Promotion and Private Sector Development (IPPSD). He added that the meeting was of a special interest o the group of AMPRIP's Sanitary and Phytosanitary (SPS) component, especially SPS legislation, regulation, strengthening institutional capacity on SPS, harmonisation of SPS issues, Free Trade Area (FTA) and Food and Agriculture Marketing Information System (FAMIS). He noted that COMESA has identified three Regional Centres of Excellence to increase SPS capacity in the region. These are: Phytosanitary-Kenya Plant Health Inspectorate Service (KEPHIS) -Kenya, Animal health in Zambia and Food Safety in Mauritius.

Mr. Moses Mwale officially opened the meeting on behalf of the Permanent Secretary to the Ministry of Agriculture and Cooperatives in Zambia. He emphasised the importance of pest databases in SPS agreements in facilitating international agricultural trade and within COMESA region. The session ended up by the official presentation of the server to the Ministry of Agriculture and Cooperatives in Zambia by Drs.Karl Sutter and Lloyd Garcia of North Carolina State University, Raleigh and USAID East Africa Office respectively.

Presentations and discussions

Dr. Yemi Akinbamijo, Acting Director of the Inter-African Phytosanitary Council of African Union (AU-IAPSC), Yaoundé-Cameroon presented a profile of IAPSC. He informed the meeting that the institution was under going a renaissance and had a new strategic reorientation for the African Plant Protection Organisation (APPO). Its new Phytosanitary strategy would include functional partnerships, advice on policy, capacity building, harmonisation of Phytosanitary regulations in Africa and funding. He furthermore emphasized the IAPSC's role in developing Phytosanitary information management in Africa, including databases on Phytosanitary issues, as well as policy development, strengthening linkages and capacity building in SPS issues. He added that the IAPSC's goal was to strengthen links with regional RECs and initiatives such as EAPIC and generally become more visible as the African body for information and resources on Phytosanitary policy and political initiative. This would be accomplished through actively involving governments in Phytosanitary and crop protection issues and strengthening designated centres of excellence, such as IAPSC's regional approach with KEPHIS for East Africa, DPPQS for South and IITA for West and Central Africa. He ended-up listing some IAPSC partnerships which include CAADP, AU-IITA/BIOFORSK, and PANSPSO on capacity building for SPS, food safety and policy framework. Plans were underway to hold a donor conference championed by AGRA and AU-IITA/BIOFORSK among others.

Dr. Washington Otieno, General Manager-Inspection Operations at the Kenya Plant Health Inspectorate Service (KEPHIS), made a presentation on the WTO Project to develop a Centre of Phytosanitary Excellence (COPE). He said that, the COPE will be housed at KEPHIS and partners include CABI, IPPC, NPPS, and USDA. Initial Funding was sourced from WTO and KEPHIS. The Project Management Committee (PMC) has partners from the region that will have a say on how the centre should be managed. Other members of the PMC will be drawn from NPPOs in the region, private sector agencies who are active consumers of Phytosanitary services.

Like IAPSC and donor Agencies. He emphasized on the role of COPE which will be to increase the visibility of regional Phytosanitary issues at policy and training levels and to reorient Phytosanitary capacity to apply what we have for better management of issues. It will be concerned specifically with setting up a legal and institutional frame work, a Phytosanitary training unit, and a pest risk assessment unit. Some of the strategies include capacity building for Phytosanitary issues, serving stakeholder clientele in the private sector and promoting regional ownership with a self sustaining business model.

Training in capacity building will include the use of the Phytosanitary Evaluation (PE) tool.Dr. Fen Beed of IITA presented the Road Map to create a coordinated Network for plant Disease Diagnostics. The increased diagnostic capacity is required to realise trade opportunities, alleviate threats to productivity and create plant pest awareness that will move NPPOs from fire fighting to pre-emptive control of pests and diseases. He highlighted the purpose of IPDN which is to establish regional networks that can provide capacity for rapid disease diagnosis. He noted that the networks will be involved in training workshops, sharing of technical information and developing SOPs. IAPSC could be of help in ensuring that this issue is properly addressed. The meeting was informed that some capacity exists in the region and we could build on it.

Dr. Z. M. Kinyua, coordinator for EA region that covers Kenya, Uganda and Tanzania, explained that the IPDN activities in East Africa are conducted under the on-going IPM CRSP, Regional Diagnostic Laboratories, and Global Theme Project. The project is supported by USAID and led by the Ohio State University (PI: Dr. Sally Miller). Besides the presentations of main activities of the project the website of IPDN was presented.

CABI talk of the Participatory plant disease surveillance and vigilance which involves the global diagnostic's activities which are carried out free of charge by the Global Plant Disease Clinic in UK, which receives some funding from DFID. The clinic has received many samples for diagnostics from Africa. It emphasised on the need to link to the GPD.

Dr. Emmanuel Iyamulemye Niyibigira presented ASARECA research projects.

A restructured Association for Strengthening Agricultural Research in East and Central Africa (ASARECA) started since October 2007. It aimed at reducing transaction costs, implementing fewer / larger projects of regional significance, being impact oriented and participating in the implementation of different pillars; especially the one on addressing the whole chain from research, extension, training and marketing.

The Country pest databases of five crops in four countries of East Africa (Zambia, Kenya, Tanzania, and Uganda) were presented by different country representatives, with emphasis on progress made since the last meeting, challenges, lessons learned and way forward.

Dr. Jan Breithaupt of the FAO Overviewed IPPC and FAO crop protection and production activities in Africa. FAO Crop Protection Programme in Africa includes pesticides, IPM projects in EA countries, desert locust sub-Sahara Africa, migratory pests, IPPC on Phytosanitary measures and EMPRES on pest databases and the Rotterdam Convention (PIC) on pesticides. FAO has 4 sub-regional offices.The Programs involved in surveillance, and disease mapping, with activities in Kenya and Tanzania on cassava and banana, respectively; invasive species-*Prosopis* in collaboration with CABI, and the biosecurity proposal by FAO in collaboration with AU. The IPPC activities in Africa involve the establishment of a Regional Centre of Phytosanitary Excellence in Kenya to give support to national systems, the implementation and supervision Phytosanitary projects in various countries, the assistance in preparing and finding donors for regional projects, the organization of regional and national workshops on ISPMs, PRA, PCE and Strategic Planning, the annual workshops on Draft ISPMs and finally the holding of workshops and technical support for information sharing through International Phytosanitary Portal (IPP).

FAO will also works hand in hand with IAPSC for the Capacity building activities. Dr.David Nowell IPPC, Secretariat Rome, Italy presented the information exchange under the IPPC. He noted that IPPC official reporting process was determined by a treaty and each contracting party is required to designate a contact point for exchange of information connected with the implementation of this convention. He added that the role of the contact point was explained including verification of information, with the benefit of ensuring reliability, transparency, trust and improved response time. He added that there are a total of 166 contact points and 150 editors. There was a need to include fields in the PIMS database (pest status, host information as spelt out in ISPM 17 on what to report) that would easily link to the International Phytosanitary Portal (IPP). The meeting was also informed of the need to include Alien Invasive Species (AIS) in the database.

For Karl Database feedback, PIMS was presented. The team suggested survey, seed quality and pesticide treatment as additional function. The possibility of using commodity as a focus was suggested along with inclusion of pairwise functions for comparison of data. The use of mobile phones for pest surveillance, as was the case in Uganda, was highlighted..

Dr. Kiesolo Raymond of COMESA, Presented the FAMIS. The COMESA's Agricultural Marketing Promotion and Regional Integration Project (AMPRIP) houses the web based Food and Agricultural Marketing Information System (FAMIS). The uniqueness of FAMIS is that all information on food security, animal health, plant protection, food safety, market and trade information is in one website. This server is as a one stop supermarket for information. The FAMIS website consists of three pillars, food security, SPS, and marketing information.

Focus was given to the SPS pillar with legal framework, animal disease status, and plant disease/pest list and food safety status. The plant disease data could be linked to the EAPIC database. However the legal framework was still in preparation while national and regional SPS bodies were presented. Member states were to provide information more promptly and have to dedicate target lines on data collection and communication. There was a need for COMESA to strengthen existing focal points, which were not functional, especially those involved in WTO-SPS activities.

Mr. Chiluba of ZARI, presented the Zambia Pest database site. He suggested adding the regulatory status (official control) of pests in Zambia. Ms Yu Takeuchi carried out the GIS Training. The participants were given a hands-on training in using Geographic Information Systems (GIS) to create pest distribution maps using Arc Map –Arcview software.

The discussion from the above presentations highlighted on the points which are as follows:

- The possibility of EAPIC becoming a successful initiative was discussed at length with participants from related initiatives giving guidance on how to handle challenges including relationship/linkage of EAPIC to other related databases (IPPC, Ecoport, EMPRES and CABI), avoiding duplications and enhancing sustainability of EAPIC activities.
- The meeting was informed that the IPPC site would be simplified and made more interactive and that it would contain extra information in support of phytosanitary issues.
- The meeting was an excellent opportunity for Regional Economic Communities (RECs), such as SADC and COMESA, and other stakeholders in the region to create awareness of their activities and their role in respect to EAPIC's initiative.

It Challenges pointed out during the meeting were the lack of government support /appreciation of the PIMS, the Hosting of the server and/or unreliable Internet access, the lack of a dedicated IT Administrator to maintain PIMS databases, the Poor communication among IT managers to solve technical problems, the lack of GPS readings for pest distribution and surveillance and finally the Inadequate sources of pest information.

INTERNATIONAL PLANT DIAGNOSTIC NETWORK WORKSHOP MAKERERE UNIVERSITY, KAMPALA, UGANDA

JUNE 30 - JULY 4, 2008

Introduction

The mission to Kampala was initiated by an invitation from Prof. Samuel Kyamanya; Regional Integrated Pest Management Collaborative Research Support Programme of the Department of Crop Science of the Faculty of Agriculture, to attend an International Plant Diagnostic training workshop organized by the Makerere University of Kampala (MUK) in collaboration with the Ohio State University and the United Stated Agency International Development (USAID) East Africa under the auspices of the Regional Plant Diagnostic Network as part of the on-going regional collaborative project under the IPM-CRSP.

The general theme of the workshop was" the networking in plant diagnostics for health management, food security, quality assurance and facilitation of trade". Its purpose was to develop human resource capacity in plant disease diagnostics with Eaten Africa. A total of 26 Participants for this workshop came from Kenya, Rwanda, Uganda, Tanzania, Zambia, and the Inter-African Phytosanitary Council of African Union (AU-IAPSC) Yaoundé - Cameroon. There were two observers from the Central Science Laboratory of the United Kingdom and ASARECA-Uganda. 21 Facilitators came from APHIS in Kenya, Ohio State University of the USA, IITA, Kenya and Uganda.

The workshop included oral presentations by resource persons followed by practicals in Plant pathogen isolation, detection, identification and diagnosis techniques as well as Clinic Information Management Systems. In addition, there was an introduction to the International Plant Diagnostic Network (IPDN) whose aim was to facilitate the establishment of the regional database and promote communication and private sector involvement in plant disease diagnosis.

During the workshop, four themes developed to suite the Networking in plant diagnostics for health management, food security, quality assurance and facilitation of trade were as follows:

- Institutions, Phytosanitary trade regulations and the IPDN,
- Monitoring, detection and diagnosis in plant diagnostics,
- Application of techniques in plant diagnostics,
- Communication tools and standard operating procedures in plant diagnostics,
- Clinic Information Management systems (CIMS), Digital Diagnostic Imaging Systems (DDIS).

Institutions, Phytosanitary trade regulations and the IPDN

On the introduction and welcome address of Prof. Samuel Kyamanywa, Regional Coordinator-IPMCRSP East Africa, he emphasized on the importance of the workshop and massive turn out of participants. The Head of Department of Crop Science sitting in for Prof. Mateete Bekunda, Dean-Faculty of Agriculture, Makerere University (MUK), opened the ceremony. The theme of the day which was institutions, Phytosanitary trade regulations and the IPDN was developed by eleven presentations.

Prof. Sally Miller of the Department of plant pathology of the Ohio State University, USA discussed the plant disease diagnostics and the International Plant Diagnostic Network. She said that the project on Integrated Pest Management Collaborative Research Support Program project was established in October, 2005 and funded by the USAID. Its activities include providing information and capacity building to reform and strengthen policies and local/national institutions that influence pest management. It also develops and integrates sustainable resource-based, local enterprises into national regional and global markets.

She said that the program considerations were the multi-Multi-institutional approach to IPM research, training and outreach, the Participatory approach, involving stakeholders in problem definition and the address of IPM problems with potential of significant impact. The Mission for the US National Plant Diagnostic Network for example was to Enhance national agricultural security by quickly detecting introduced pests and pathogens, participate to effective communications network, harmonize reporting protocols and produce national database of pest and disease occurrence.

Dr. Abdel Fattah Mabrouk, Amer of AU-IAPSC elaborated on Sanitary/ Phytosanitary requirements for trade in East Africa. After describing the region which has a total land area of 6,921,320 sq km and estimated population of 271, 389,844 inhabitants that accounts for about 32,2% of the total population of Africa (841,627): he emphasized on the Africa's economic development that depends on reduction of trade costs which is high. The heads of state and government of African Union declared their intent to accelerate regional integration effort that seek to provide solution to regional economic, political and social problems. The profile of intraregional trade in Africa is mainly focused on Agriculture. The SPS and trade should be based on exporter organizations, producer organization/s, decision making group or sub -group, quarantine regulations, technical economic support group. It should be based on export opportunity analysis and export supply chain that turns around farmer, packer, transporter, trader, exporter, retailer and consumer. The managing produce quality is another element to be considered.

The topic on East Africa Phytosanitary Information Committee, doing Our Part for East African Trade was developed by Dr. Lloyd Garcia, of the USAID East Africa, Nairobi Kenya. The policy , strategies, regulations and authority of NPPOs focus on field operations that involve prevention, treatment, awareness, surveillance and diagnostic operations via laboratory and field response. He pointed out goals of EAPIC of plant Pest data base which are increase of trade and international SPS compliance that involve harmonization of border inspection protocol, pest identification, pest survey and communication and pest identification network.

The regulatory role of the crop protection department of the Ministry of Agriculture, Animal Industries and Fisheries (MAAIF) and its facilitation of trade within the East African region by Mr. Okullo Kwany focused on the division of the Department which has regulation, certification and diagnostic and epidemiology. Dr Esther Kimani of Kenya Plant Health Inspection Services (KEPHIS) discussed the role of centres of excellence in plant diagnostics. She pointed out the SPS measures, the harmonization of the international standards, and the role of a referral laboratory for plant health should play. Dr. Fen Beed of the International Institute for Tropical Agriculture (IITA), Uganda presented a topic on the International Plant Disease Diagnostic Network in West Africa, while Dr. Robinah Ssonko, of the Makerer University of Kampala (MUK) discussed the horticultural industry and plant diagnostics. The IPDN activity in East Africa was presented by Dr. Zachary Kinyua, of Agricultural Research Institute (KARI), Kenya and the IPM CRSP activities in East Africa by Prof. Samuel Kyamnywa of MUK, Uganda.

Finally, capacity and need for plant diagnostics in reseach institutions, universities and in regulatory organizations were respectively presented by Dr. Jerome Kubiriba of Zamia Agricultural Research Institute (ZARI), Dr. James SSebuliba of the University of Agriculture of Tanzania and Dr. Robert Karyeija, of MAAIF, Uganda.

Monitoring, detection and diagnosis in plant diagnostics

Issues discussed of day2 were on the monitoring, detection and diagnosis in plant diagnostics. Arthropod pests and pathogens monitoring, detection and diagnosis at border entry points of Kenya for example was developed. KEPHIS has laboratories for Chemical analysis(pesticides, fertilizers, water), soil analysis, seed quality testing and pest diagnosis and tissue culture and inspect insects, mites, molluscs, nematodes, noxious weeds, pathogens, plant debris and soil through documentary checks, consignment integrity checks, Phytosanitary inspection, testing. A general approach pathogen detection and diagnosis of plant diseases caused by bacteria was also the order of the day. It was mentioned that only pure bacterial culture are vital when morphological, physiological and biochemical testing and fatty acid analysis are involved.

In the field detection and diagnosis of plant diseases, early detection and diagnosis of plant pathogens can provide more accurate forecasts of disease, and improve the precision of application of control measures. Virus plant diseases diagnosis through symptoms, serological diagnosis and molecular (nucleic acid-based) was discussed by Dr. Peter Sseruwagi. Prof. Sally Miller of the Ohio State University closed the session by giving lecture on the identification of Plant Pathogenic Fungi and Fungal-like Organisms. She ended her presentation by the diagnostic flow chart. The field excursion to the National Crops Resources Research Institute for the detection and identification of field pests and pathogens and digital imaging/ photography induction as well as triage of samples in diagnosis laboratory facilities were done.

Application of techniques in plant diagnostics

The application of techniques in plant diagnostics was the main focus of the day. Case studies of arthropod pests at farm level, the Larger Grain Borer of maize, the banana Xanthomonas wilt, the application of molecular techniques in identification of sweet potato viruses, the African Cassava mosaic Virus and Cassava Brown streak Virus in Uganda were developed. The diagnosis of nematodes that affect trade in Uganda was not left out. The communication tools and Standard Operating Procedures (SOP) in plant diagnostics concerned the computer session on communication systems, the developing communication systems and networks for pest identification or diagnosis were taught Illustration of the standard Operating Procedures in Kenya and Zambia was carried out. The Group assignment and practical on development of SOPs using a chosen quarantine pest was thought by Prof. Sally Miller. Discussion and the presentation of group work marked the end of the day. Furthermore participants received lectures on the SOP-Banana Bunchy Top Virus, SOP Bean root rot draft, Larger Grain Borer of Maize and SOP for Mediterranean fruit flies.

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