



THE AFRICAN ASSOCIATION OF INSECT SCIENTISTS

P. O. Box 59862, 00200 City Square
NAIROBI, KENYA



**18ème Conférence de l'Association Africaine des
Entomologistes**

**18th Conference of the African Association of Insect
Scientists**

Salle de Conférence du Ministère de l'Agriculture Ouaga 2000/
Conference room of the Ministry of Agriculture Ouaga 2000
OUAGADOUGOU, BURKINA FASO

16 - 20 Novembre / 16 - 20 November 2009

**“ Gestion des insectes ravageurs des cultures
et vecteurs de maladies pour un
environnement viable et une sécurité
alimentaire en Afrique: Développements
courants”**

**“Insect pest and vector management for
sustainable environment and food security in
Africa: Current developments”**

Programme

Contrôle durable des Arthropodes ravageurs et vecteurs en Afrique

Succès et contraintes dans la mise en œuvre des programmes/projets de lutte intégrée : quelques leçons de cas en Afrique de l'Ouest et Centrale.

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Des programmes et projets de lutte intégrée ont été exécutés dans la plupart des pays en Afrique subsaharienne. Cependant les succès de ces projets sont restés limités au delà de leur mise en œuvre en raison de nombreuses contraintes. Cette situation est analysée dans la présente communication en prenant pour exemples les cas de projets exécutés au cours des deux dernières décennies en Afrique de l'Ouest et du Centre. Il s'agit du Projet CILSS/USAID/FAO exécuté dans 9 pays Sahéliens (1980-1987), du Projet de lutte intégrée en culture de sorgho au Mali et au Burkina Faso (1996-2000) et du Projet Régional BAD/CBLT dans le Bassin du Lac Tchad (2003-2005). La particularité commune de ces projets est d'avoir bénéficié de financements extérieurs (USAID, Commission Européenne, BAD). Les pays bénéficiaires ont contribué à travers les infrastructures et le personnel (chercheurs, agents de vulgarisation et paysans) pour l'exécution de ces projets. Les succès enregistrés ont reposé sur le renforcement des capacités humaines à travers des formations académiques et professionnelles des acteurs, l'accroissement des rendements des cultures cibles, l'amélioration des revenus des paysans et la réduction de l'usage des pesticides toxiques pour un meilleur environnement. Les contraintes majeures découlent de l'absence d'une politique nationale en matière de lutte intégrée, de structure organisationnelle et de revenus suffisants des paysans pour appliquer les technologies développées. A cela s'ajoute l'absence de financement des pays bénéficiaires pour étendre et perpétuer les acquis au delà de la fin des projets. Des perspectives, défis et recommandations sont dégagés à la lumière de cette analyse afin de permettre à la gestion intégrée des ravageurs de continuer à jouer un grand rôle pour aider les pays à atteindre la sécurité alimentaire et à faire face aux changements climatiques.

Mots clés : impacts, contraintes, renforcement des capacités, politiques nationale en lutte intégrée, financement, sécurité alimentaire, changements climatiques.

Successes and constraints in implementing IPM programmes/projects: lessons learnt from cases studies in West and Central Africa

IPM Programmes/projects have been implemented successfully in many sub-Saharan African countries. Several examples can be given to illustrate this situation. However successes beyond implementation have been very limited because of several constraints. This situation has been reviewed in this paper taking into account the cases of IPM projects implemented in West and Central Africa over the two past decades: the CILSS/USAID/FAO IPM project in 9 Sahelian countries (1980-1987), the Regional Sorghum IPM Project in Burkina Faso and Mali (1996-2000) and the ADB/LCB IPM Project in the Chad Lake Basin (2003-2005). The common feature of these projects relies on funding provided by external donors/agencies such as: USAID, European Commission and African Development Bank (ADB) while beneficiary countries provided facilities and personnel (scientists, extension workers and farmers) for project implementation. Successes were based on capacity building through academic and/or professional trainings (scientist, extension workers and farmers), increasing yields in target crops, improving farmer revenues and welfare, reduction of use of toxic pesticides and better environment. Major constraints are mainly lack of national IPM policy and body (organizational

structure), low incomes of farmers to access developed IPM technologies, and funding from beneficiary countries to extend and sustain results beyond the end of projects. Perspectives/challenges have been outlined as IPM still has a major role to play in helping countries to meet food security and to face climate changes.

Key words: impacts, constraints, capacity building, national IPM policy, organisational structure, funding, food security, climate changes.

Compatibility of Calneem oil and two parasitoids, *Habrobracon hebetor* (Hymenoptera: Braconidae) and *Venturia canescens* (Hymenoptera: Ichneumonidae) for protection of stored rice against infestation by three stored-product insect pests.

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The compatibility and protectant potential of Calneem oil to *Tribolium castaneum*, *Corcyra cephalonica*, *Ephestia cautella* and their parasitoids, *Habrobracon hebetor* and *Venturia canescens* were evaluated in stored rice in the laboratory. Efficacy of Calneem oil against *T. castaneum* was assessed by filter paper technique, topical application, grain treatment, persistency and repellency assays. The Calneem oil was applied as concentrates (0.1%, 0.2%, 0.5%, 1.0%, 2.0% and 3.0%), in which the oil was dissolved in water using soap as emulsifier. To assess the persistence of the preparations, beetles were exposed to treated grain which has been stored for 1, 10, 20, 30 and 60 days. In the treatment combination with parasitoids, different concentrations of Calneem oil (0.5%, 1.0%, 2.0%, and 3.0% v/v), 50 ml of cracked rice were placed in 1 L glass jars and 20 last instar larvae of *C. cephalonica* and *E. cautella* were added. Ten freshly emerged adults of *H. hebetor* and *V. canescens* were introduced into all the glass jars. Treatments comprised control grain without calneem oil, grain treated with only calneem oil, grain treated with only *H. hebetor* and/or *V. canescens*, grain treated with Calneem + *H. hebetor*/*V. canescens*. Each treatment was replicated four times and was kept in a growth cabinet with temperature 25 °C and 65–70% relative humidity. Progeny emergence was recorded in all the different treatments after 3 weeks. Calneem oil was highly toxic and repellent to *T. castaneum* with an overall repellency in the range of 80-100%. Beetle mortality was dosage-dependent. The development of eggs to adults on cracked rice was completely inhibited by Calneem oil treatments. The rice grains admixed with Calneem oil was effective on grain and on filter paper discs, because the lowest dosage of 0.1% killed at least 50% of the beetles between 24 and 48 h of exposure. The effectiveness of Calneem oil was significantly reduced by the length of storage after application. The parasitoids, *H. hebetor* and *V. canescens* significantly reduced the emergence of *C. cephalonica* and *E. cautella* in all the treatments compared to the control. Results of this study showed that, treatment combination was more effective compared to each treatment alone. It is possible to incorporate calneem oil in a well designed pest management programme with parasitoids.

Key words: Calneem oil, compatibility, parasitoids, *Tribolium castaneum*, *Corcyra cephalonica*, *Ephestia cautella*, *Habrobracon hebetor*, *Venturia canescens*