

IMPORTATION AND USE OF BIOLOGICAL CONTROL AGENTS IN TANZANIA

Background

National Biological Control Programme (NBCP) is a unit under Plant Health Services in the Directorate of Crop Development in the Ministry of Agriculture Food Security and Cooperatives.

It was established at Kibaha Sugarcane Research Institute in 1990 following the invasion of Cassava mealybug, *Phenacoccus manihoti* (Matile Ferero). NBCP coordinates importation and

use of biological control agents in the country. Activities involved include:

- identification and assessment of pests and weeds
- selection and testing of appropriate biological control agents
- importation and multiplication of selected biological control agents
- Release of biological control agents in affected areas
- Monitor and evaluate efficacy of released biological control agents
- Conduct training/Awareness creation to the public on ongoing biological control projects
- Provide technical advice to stakeholders undertaking biological control research
- Research on other management options compatible to biological control

Protocols

Importation of biological control agents in the country is guided by Plant Protection Act 1997 and Regulations, 1998. Importers of biological control agents include Research Institutions, universities,

private companies and private farmers. There is continuous interaction between NBCP and importers to ensure that the existing regulations are adhered to.

According to the Act, approval for importation

of biological control agents is given by National Plant Protection Advisory Committee (NPPAC). Importers are required to prepare dossiers for biological control agents intended to be introduced and

submit to Secretary of Biological Control Agents Subcommittee (BCAS). The dossiers are evaluated in BCAS meetings, and recommendation for approval made to NPPAC.

Achievements

Since 1988, more than twenty species of biological control agents including predators, parasitoids, phytophages and pathogens have been introduced in the country. Through classical biological control approach,

pests of economic importance including cassava mealybug, cassava green mite and water hyacinth have been successfully managed, leading to assurance of household food security and income to farmers. Recently,

two species, *Encarsia haitiensis* and *E. guadeloupeae* were introduced to manage spiraling whitefly, *Aleurodicus disperses* (Hemiptera: Aleyrodidae) which invaded the country in 2002.

A table below shows scientific names, origin, target pest and host crops of some of the biological control agents.

Table 1. Origin, Target pest and Target host crop of the most effective Biological Control Agents that were Introduced in Tanzania between 1988 and 2002

S/No.	Name of bio agent	Type	Origin	Target pest	Host crop	Importer	Year of introduction	Status	Impact on target
1	<i>Apoanagyrus lopezi</i>	Parasitoid	S. America	Cassava mealybug	Cassava	MAFSC-NBCP	1988	Established	Up to 90% decline in population reported in country.
2.	<i>Neochetina bruchi</i>	Phytophage	S. America	Water hyacinth	Water bodies	MAFSC- NBCP	1995	Established	Water hyacinth in 70% in Lake Victoria
3	<i>N. eiechhorniae</i>	Phytophage	S. America	Water hyacinth	Water bodies	MAFSC- NBCP	1995	Established	As above
4.	<i>Tamarixcia leucaenae</i>	Parasitoid	Trinidad & Tobago	Leucaenae psyllid	Leucaenae	Ministry of Natural Resources	1995	Established	Decline of psyllid damage on <i>T. leucaenae</i> in Tanga and Morogoro
5.	<i>Typhlodromalus aripo</i>	Predator	S. America	Cassava green mite	Cassava	MAFSC-NBCP	1998	Established	Up to 60% decline in population and increase in cassava yield reported
6.	<i>Cales noacki</i>	Parasitoid	Florida	Citrus wooly whitefly	Citrus	MAFSC- NBCP/ARI Mikocheni	1999	Established	Damage due to C. reported in Tanga
7.	<i>Cotesia flavipes</i>	Parasitoid	Asia	Cereal stemborers	Cereals	MAFCS-NBCP	2002	Established	Damage due to C. minimized in East Lake zones.
8.	<i>Diadegma semiclausum</i>	Parasitoid	Europe	Diamond back moth	Brassica	MAFSC- NBCP	2002	Established	Increase of income to reduced pesticide use in Arusha and Tanga

ACRONYMS

MAFSC - Ministry of Agriculture Food Security and Cooperatives

NBCP – National Biological Control Programme

ARI – Agricultural Research Institute

Whom to contact

Coordinator, National Biological Control Programme,
P.O.BOX 30031, Kibaha - Tanzania
Tel/Fax + 255 23 240 2729
Email: biocontrolprogram@yahoo.com

