

OPTIONS: Optimising Pesticidal Plants: Technology Innovation, Outreach and Networks

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Natural Resources Institute



OPTIONS

Optimising Pesticidal Plants:
 Technology Innovation, Outreach and Networks

The use of pesticidal plants for food security through pest control technologies which meet local needs and resources will be promoted, facilitated and optimised. The project partners and community-based organisations in Kenya will be enabled to support OPTIONS technology innovations through propagation, training and revising policies to facilitate outreach. The project will optimise use and propagation of pesticidal plants, raise awareness about pesticidal plant use, create an environment for cross-training and skill transfer, and develop policies that enable commercialisation, marketing and promotion of safe and effective pesticidal plants.

Challenge

Most African farmers depend upon their agricultural produce for their livelihoods, so food security along with factors that limit production of sufficient food for their families are their most important considerations. Commercial insecticides are usually effective, but they have limited distribution in rural areas, are often adulterated (diluted to ineffective concentrations by unscrupulous traders) or applied at inappropriate application rates due to illiteracy, poor labelling or use of old, expired products. Moreover, they are increasingly ineffective due to pesticide resistance. Health and safety is also a problem as insecticides are typically applied without protective clothing. There is no mechanism to ensure food safety for consumers, and little concern for the chronic effects of exposure. The environmental impact for wildlife, crop pollinators and natural enemies is also severe while the cost can be prohibitive. Pesticidal plants (botanical insecticides) are an effective alternative for the control of invertebrate pests and are used widely across Africa. Their promotion, particularly with optimised application that makes them safer and more reliable, improved access to plant materials through propagation and cultivation, and improved delivery services, would have a huge impact on pest management and ultimately food security for small holder farmers.



Propagation of pesticidal plants by nursery growers is the most effective way to increase availability of plant material for pest control without putting pressure on wild habitats

The OPTIONS Project Partners

- Sokoine University of Agriculture, Tanzania
- Mzuzu University, Malawi
- University of Zimbabwe, Zimbabwe
- World Agroforestry Centre, Kenya
- National Museums of Kenya, Kenya
- Sustainable Global Gardens, UK
- Royal Botanic Gardens, Kew, UK
- Natural Resources Institute, University of Greenwich, UK

OPTIONS started on the 1st of January 2014 and will end on the 31st December 2016

Rationale

- The OPTIONS project is developing an incentive-driven nursery propagation strategy for promoting indigenous pesticidal tree species to farmers, developing new pest control technology innovations for safer, effective and sustainable use of pesticidal plants in food production, and fully exploiting plants for use in the control of stored product pests, field pests and livestock ectoparasites (parasites, such as a fly or tick, that live in or on the skin of another organism).
- The propagation of Pyrethrum will be developed in Malawi and Zimbabwean highlands based on a successful model in Tanzania in partnership with McLaughlin Gormley King (MGK), a major commercial importer of Pyrethrum products to the USA.
- Pesticidal plants will provide marketable products for nursery producers who can distribute widely the most effective and useful species after appropriate training.
- The commercial and financial incentives will ensure the sustainability of small businesses and farmer co-operatives will provide both an additional income stream to poor farming communities and a major uptake pathway for business-driven promotion of this proven and effective pest management technology.
- The strategy will guide sustainable agricultural development through environmentally benign and safe pest control. It will use reliable and locally available plant species that can be promoted and distributed via trained commercial nursery growers directly to farmers and reduce poverty without the reliance on synthetic pesticides.

Policies related to regulation, bio-diversity conservation, health and safety directives and commercialisation of pesticidal plants will be developed. Research carried out across Africa will be empowered by ensuring pesticidal plant technologies are properly focussed on current constraints and strongly linked to the needs of end users, civil society and enterprises. Institutional and policy levels across countries will be strengthened by encouraging debate and consensus over best practice guidelines, and the need for formal regulatory frameworks regarding the protection and utilisation of indigenous knowledge, bio-diversity conservation, health and safety and the commercialisation of pesticidal plants and overall environmental protection.



Farmer trials of pesticidal plants provide an opportunity to train farmers in their preparation and demonstrate their efficacy



Propagation of *Securidaca longepedunculata* will reduce pressure on natural woodlands and unsustainable harvesting of the root bark.

ACP S&T Programme



Funded by the European Union

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