

Muscling in on Locust Control

In central and southern Africa swarms of red locust (*Nomadacris septemfasciata*) can, without warning, raze farmers' crops to the ground. One square kilometre of swarm can be made up of between 40 million and 80 million locusts. Just one million locusts can eat around 2 tonnes of fresh vegetation in one day, that is about as much as 10 elephants or say 2500 people can consume in a day.

The red locust (*Nomadacris septemfasciata*) feeds voraciously – it can eat its body weight (approx 2 g) daily



Unlike many locusts and grasshoppers, which are common to semi-arid regions, the red locust breeds in seasonally flooded plains. These flood plains represent rich sources of biodiversity and many are populated by herds of wild game animals and a wealth of bird life. Current control measures for red locust are based on aerial application of chemical insecticides which are toxic to many non-target organisms, and can be hazardous to humans and livestock. There is a need for alternative technologies/methods of control to avoid substantial impacts on biodiversity. To this end, a DFID-funded project (R7818) was initiated through the CPP to develop novel, environmentally benign control strategies based on the use of a biological pesticide – or biopesticide.

The active ingredient in the biopesticide is a naturally occurring fungal pathogen that attacks

locusts and grasshoppers. Extensive testing has demonstrated its effectiveness against grasshoppers in the Sahel, desert locusts in West and East Africa, brown locusts in South Africa and Moroccan locusts in southern Europe. Moreover, research has indicated that the biopesticide has minimal impact on non-target species and is harmless to humans, other mammals, reptiles and birds. In South Africa, the biopesticide trading under the name Green Muscle™ has been registered for use against brown locust and a commercial production facility is currently being developed.

On the strength of promising results from small-scale trials in Mozambique, Tanzania and Zambia, and in the face of a growing locust problem in the region, the Food and Agriculture Organization (FAO) provided funds to the Government of Tanzania through the Technical Cooperation Programme to support a large-scale application of the biopesticide. By combining expertise and resources of these projects, 150 kg of fungal spores were produced, and an area of 4000 ha was treated in the Wembere flood plains in Tanzania in February 2003. This represents the single largest treatment with the biopesticide in Africa to date and is a breakthrough for the project in demonstrating the feasibility of using this novel technology at truly operational scales in the region. With the interest and commitment of FAO, together with national programmes and the regional organization mandated for control of locusts, the project is now poised to make environmentally sustainable control of red locust a reality.



Red locust infected by the biopesticide Green Muscle™

R7818: Development of biologically based control strategies for environmentally sustainable control of red locust in central and southern Africa

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