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“Bridging the gap between increasing knowledge and decreasing resources”

## Self-Made Pest Control Products for Organic Cotton Production in Nimar Region, Madhya Pradesh, India

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### Abstract

Homemade organic pest control products offer an ecological, healthy and low-cost alternative to ready-made products. Yet the recipes are not standardised and the products vary in quality and concentration of the active ingredients. bioRe®, together with the Research Institute of Organic Agriculture (FiBL), engages in research activities to address this challenge and improve pest management strategies in organic farming.

During the cotton cropping season 2013–14 one on-station and two on-farm trials were conducted with the objective of comparing different spraying intervals of the most commonly used home-made organic pest control products in order to identify an optimum level of crop protection. The study focused on the effect of the spraying intervals on the most important sucking pests. Besides sucking pest incidences, data on plant stress symptoms and yield formation as well as economic parameters were also collected. Additional on-station trials were established to investigate different measures of early stage crop protection and to detect specific effects of three self-made products against certain sucking pests.

The products were prepared according to recipes standardised by bioRe® after careful research and hands-on experience of its associated scientists and extension workers. This knowledge was reproduced in pictorial technical leaflets, which are easy-to-understand for the local farmers. A total of 11 leaflets — on seed treatments, early stage protection measures, pest control sprays, effective spraying technique and growth promoter were designed in both English and Hindi and will be used for dissemination activities.

On-station results were inconclusive due to low pest pressure in this season, as well as the small size of the trial plots. Results of on-farm trials revealed that a suitable strategy for pest monitoring is needed for farmers to determine at what time point pest control interventions are indicated. Further research is needed to understand the specific effects of homemade products on the different insect species. Optimised dosage and application techniques have to be worked out along with other options for integrated pest control (e.g. bird perches, border crops, soil enhancement practices) that could reduce the frequency of time-consuming spraying. These activities would best be conducted in on-farm trials.

**Keywords:** Cotton, organic pest management, participatory technology development (PTD), self-made pest control products