

Herbal formulation for termite control in groundnut crop

National Second
Plant Protection



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Termite infestation is a major problem in different crops and results in major losses. Nathubhai Patel (65), a farmer from Sabarkantha, has developed a formulation for termite control in groundnut crop.

His village, Rampur, where he lives with his wife, is a predominantly agricultural village with a population of about 1800. The main crops grown in the region are groundnut, maize, cotton, castor, sesame, pulses and various vegetables. Nathubhai owns 2.6 ha of land with sandy loamy soil where he grows cotton, groundnut, pigeon pea, mustard, castor and maize. For irrigation, earlier he depended on a well but after it dried up three years ago, he has been using water from a bore. He has been completely involved in agriculture ever since he completed his class tenth.

Genesis of the innovation

About fifteen years ago, Nathubhai used to grow cotton varieties- *Shankar 4* and *Shankar 6* in his fields. For this he employed labor from Rajasthan,

which were arranged by his friends Vaktaji and Kamji Tavera. He once discussed with them the problem of insect pests (*eeyad*) in cotton for which they suggested the use of a local herb for control.

Keeping this in his mind he made a concoction of the fruit of the plant and leaves of *neem* and sprayed it over the cotton crop with good results. He noticed that after continuing the practice for a few days there were no more insect attacks.

He had some area under groundnut cultivation also. The groundnut field had a serious termite problem. Experimentally, he sprayed the herbal solution to find out if there was any effect of the same on the termites. To his surprise, the solution was effective against termite also. His yield increased by almost 150-200 kg, which inspired him to take up groundnut cultivation on a wider scale. Gradually he reduced the area under cotton cultivation and started growing more groundnuts.

The formulation

To prepare the formulation, crush the fruit of the local herb and mix 2 kg of *neem* leaves. Add 10 liter of water and boil. When the solution reduces to one-fifth, allow it to cool. Filter the solution and dilute it by adding 5 liter of water. This solution can then be sprayed on the standing crop near the lower part of stem nearest to the ground. He advises to repeat the spray thrice at three days interval till the complete control is gained.

The problem

Termites are a serious problem in the less/unirrigated and sandy or sandy loam soils. They are one of the most damaging pest in the tropics and a considerable problem in agriculture, housing and forestry. But the termites also help the food chain by recycling wood for the soil. Fungus growing termites are most dangerous type in agriculture, followed by harvesting termites. Chemical pesticides have commonly been used to control termites but they have adverse effects on the environment.

Prior Art Search reveals that ingredients of the formulation possess larvicidal, nematicidal activity and insecticidal compounds. Similar search in patent literature did not yield any result for the use as an anti-termite. However, the second ingredient *Neem (Azadirachta indica A. Juss)* has been widely used to control pests since a long time. The leaves and seeds of this plant possess termiticidal and antifeedant effect.

Formulation has been tested against termites in SRISTI laboratory, Ahmedabad, on treated wood of cactus. It was observed that the extract was effective in controlling/eliminating the termites completely. SRISTI also conducted on-farm experimentations in farmers' fields at Gandhinagar & Ahmedabad districts of Gujarat. The formulation showed significant effect on the termite population, which resulted in reduced damage in different crops.