

Termites control by avoiding chemicals

Termites are a group of insects (Isoptera) consisting of 2,750 species. 300 are considered as pests. Termites can cause considerable problems in agriculture, forestry and housing. There are several families and sub-families. There are different types of termites; dry-wood, subterranean, soil feeding mound-building, surface foraging etc.

The termite that is most troublesome in agriculture where they will eat live plant material, seedlings, crops, fencing poles and building structures like grain stores.

Termites usually attack those plants that are in a stress situation. Plants that are weak, wilting or damaged in combination with little soil organic matter content.

Despite the negative impact termites have, they are very beneficial to the ecosystem. They improve the soil fertility by decomposing organic matter and aeration of the soil. Termites moulds, rich in minerals and crushed down and incorporated into the soil improve soil fertility. Moulds provide minerals for cattle. Termites provide a shelter and food to associated organisms. Termites are an important food source for ants, guinea fowl and other mammals including humans. Ninety percent of termite species are considered highly beneficial.

The most important termite pest genera in Africa include 9 different species which generally differ in biology and mode of attack.

Macrotermes bellicosus is an African mound building termite and move out of the mound up to 50 m. They attack plants at the base of the stem, ring barking or cutting them completely. It has a highly developed social caste system which includes workers, soldiers, and reproductives. *M. bellicosus* contributes to the ecosystem by advancing the decomposition process. In spite of its many predators, it has survived to become an important part of the African ecosystem. *M. bellicosus* is a major pest in cereal crops.

Odontotermes spp. build both nests on the ground and subterranean. Damage is done to roots of plants.

Microtermes spp and *Anicistrotermes* spp. have diffuse subterranean nests and attack plants from the roots system tunnelling into the stem.

Harvester termites, grass feeding termites, build underground nests that are difficult to locate. These termites are found in dry and semi-desert areas. They cause damage to living grasses, pastures, crops and seedlings.

Termites are social insects living in colonies of thousands. Colonies are build up in castes; workers, soldiers and reproductives. Workers and soldiers are around 30 cm long, blind, wingless, soft bodied. Reproductives can be winged or wingless.

Management practice.

- By incorporating green manures termites are attracted to this green matter and prevent them from attacking the target crop.
- When the termites start swarming they are exposed to natural predators like, birds, bats, reptiles and amphibians.
- The armadillo is able to dig into mounds and can consume tens of thousands of termites in a single night.
- Increase organic matter of the soil by mulching or applying manure, this will improve food resources for the termites, improve micro bacterial activity and ensure adequate soil aeration.
- Termites live on dried material. Healthy plants are the last food option for termites, maintain healthy plants.

Control

Different control measures could be taken: Prevent termites having access to plants, Reduce termite numbers, provide plants less susceptible to termites.

- Removing the queen, by digging up the mounds and allow chicken to eat them. Light a fire in the mound after queen removal.
- Predatory ants can control termites. These are attracted by meat bones and sugarcane husks.
- Termite damage is relatively low in fields where Gliricidia is planted as a shade tree.
- Cultivating *Ricinus communis* on the plots attacked by termites. The next cropping season the termite population is reduced considerably. Also castor press cake can be incorporated into the soil.
- Aloe vera cuttings are planted to keep termites away.
- The bark of the *Zanthoxylum chalybeum* is peeled and soaked in water for three days. Filter the solution and sprinkle it on the area which is attacked by the termites.
- Mulching with Neem bark, wood reduces the survival of termites.
- Soak 50 gr of pounded leaves of Snake bean tree mixed with 1 litre of water for 12 hours. Filter the solution and apply to the termites.
- Tobacco incorporated into the soil controls termites.
- Plant *Vitex doniana* around the plots as an attractant crop. Termites prefer this above cassava.
- Apply wood ash in the termite mounds.
- Apply wood ash and lime around the plant will help to deter termites.
- Control of seedlings is done by a mixture of ashes and dried *Calotropis procera* leaves. A handful of powder is put at the feet of the plant and covered with a small handful of earth.
- A 20% water extract of *Tephrosia* with an extraction time of 2 hours proved to be highly insecticidal to termites.
- Next to a new termite mound dig a strongbar magnet in the soil. This prevents those termites that build their mounds in North-South direction along magnetic lines.

Termite traps :-

Use over mature coconuts and expose them to high heat without burning the coconut, until you get a very strong fragrant smell. Drill a hole into the coconut, 2 cm wide and bury them 15-20 cm deep with 10 m distance between de coconuts. Dug the coconuts out after 10 – 15 days and the termites can be fed to chickens. Then re-bury the coconuts until the flesh all is consumed.

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