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## REPELLENTS - THE DANGER WITHIN

In the tropics, the problem of mosquitoes and the prevalence of diseases transmitted by them such as Malaria, filariasis and many viral diseases such as Japanese encephalitis, dengue haemorrhagic fever are quite common. This is because of the failure to check mosquito population effectively.

In India mosquito populations are on the upsurge all through the year except for some attenuation during few months of summer and winter. This pushes the layman to seek an easy solution in the form of repellents to control these menacing mosquitoes. The Indian customers are provided with ample choice to choose mosquito repellent

which is available in the form of mats, coils, lotions and vapourizers. These repellents use allethrin groups of compounds, herbs, oils or diethyl toluimide (DEET). The protection provided by these repellents generally lasts for 2 to 4 hours.

The current Indian market for various repellents is in the range of Rs.500 to 600 crores with an annual growth of 7-10%. This upward trend is mainly because of the increase in people's willingness and capacity to buy repellents. Researchers say that pyrethroids used in repellents leads to hyper-excitation of nervous system and prolonged usage might result in corneal damage, liver damage and asthma. A recent multicentric questionnaire based study by Mr.V.P.Sharma of Malaria Research Centre revealed that repellents are harmful to human health and their uses should be avoided and discouraged. This study was conducted in urban and rural areas in nine states.

Nearly 12% of the people interviewed (702/5920) were affected by the usage of repellents. The complaints were breathing problem, eye irritation, cough, cold and sneezing, headache, asthma, bronchial irritation, itching, ear, nose and throat pain, giddiness, vomiting, nausea, and allergy. In two cases users who did not have asthma became asthmatic.

Various alternatives to chemical based repellants have been suggested such as emptying and drying of water sources, good drainage, introduction of larvivorous fishes in ponds, lakes, rice fields etc., use of mosquito nets and mats treated with neem oil.

**SOURCE : Health Hazards of Mosquito Repellents and Safe alternatives by V.P.Sharma in Current Science, Volume 80, February 10, 2001.**

## Natural Pest Control Techniques

### Storage Pest Control

1. Custard Apple (*Annona reticulata*) leaves have insecticidal and antifeedant properties. Fresh or dried leaves mixed with the produce or placed in layers between the produce gives effective control against rice moth and bruchids for 3-4 months.

2. Finger Euphorbia (*Euphorbia tirucalli*) provides protection against a wide range of grain pests. Branches of the plant are burnt to obtain its ash. One tea cup full of ash is mixed with 20 litres of grains. This provides protection against grain pests.

3. Coconut oil, peanut oil and sesame oil can be used for protection from bruchids. 5 ml of the oil is mixed with 1 kg of grain legumes. This provides protection upto six months from bruchids.

### Fungal Disease Control

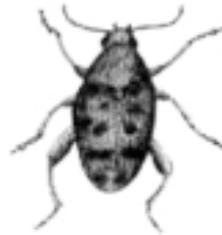
1. A mixture of ash (2-3 kg) and 1 litre of castor oil is spread on a seed bed of a size of about 100 m<sup>2</sup>. The application is repeated 2-3 times at intervals of 7-10 days. This provides protection against soil borne diseases in tobacco nurseries.

2. 2 kg of turmeric powder and 8 kg of wood ash is mixed well. This is applied over plants during early morning hours for treatment against powdery mildew.

3. Ginger can be used at the concentration of 20 gms / litre of water and sprayed thrice at intervals of 15 days. This provides protection against powdery mildew and other fungal diseases.

4. A small handful of slaked lime can be applied at the base of the tomato plant. This combats damping - off disease.

5. Cattle and goat urine have fungicidal properties. Urine from animals with a vegetarian diet is said to be preferable. Two cups of cattle urine with 5 ml peppermint oil and 10 litres of water can be used to control fungal diseases on grapes.



### Termite Control

1. Mixtures of lime and sulphur forked into the soil discourages termite attack.

2. Wood ash heaped around the base of the trunk has been recorded to prevent termite infestation of coffee bushes and date palms.

3. Cattle urine diluted at a rate of 1:6 with water can be poured down termite holes. This treatment should be repeated for a few days since the termites tried to open up.

4. Farmers mix red coloured clay with water to form a sticky paste. This paste is coated on the trunk and large twigs at the onset of monsoon when termite damage is severe. Fresh and young grafts are coated with cattle dung to protect them from termites. Combined use of the two methods effectively prevents infestations in small orchards.

**Source : Natural Crop Protection in the Tropics - Letting information come to life by Gabriele Stoll. Publishers Margraf Verlag, Germany.**



## News Line

added to the soil is increased. The weed problem is also reduced substantially.

- Source : *The Hindu*, Dec. 21, 2000

### Horse gram along with rice crop

One of the cheapest and easiest methods to add organic matter to the soil is companion cropping of horse gram along with rice crop. After the sowing of rice seeds, sow the seeds of horsegram at 6 to 7 kg/ha. No separate fertilisers are required for horsegram which is raised for green manure purpose. With the onset of southwest monsoon, the rice field gets submerged and self incorporated into the soil. In normal rainfall years; at the time of submergence of the field, the horsegram crop may be at the age of about six weeks and at the active vegetative phase.

Trials conducted have revealed that the system of companion cropping of horse gram along with rice crop is more suited to areas receiving delayed rainfall. It is estimated that in normal monsoon seasons this method about 2 to 3 MT of green manure is added to the soil. If the rainfall is delayed, the quantity of green manure

### Herbal Mosquito Repellent

T Bhuvanewaramma, a resident of Chennai, claims to have developed a mosquito repellent that contains only natural materials and not any chemicals. The leaves of the plant *Vitex negundo* (commonly known as *sambhalu*) are dried and powdered. About 100 grammes of broken rice and one litre of water is cooked and left to cool. This solution is mixed with the powdered leaves. Sugarcane waste (baggase) and charcoal powder is added to this dough, which can be made into differed shapes and then again dried in the sun. According to Bhuvanewaramma, the effect of the repellent can ward off mosquitoes for around seven hours. He adds that since the materials used are available locally, villagers can themselves prepare this repellent.

Source : *Down to Earth*, Dec. 31, 2000

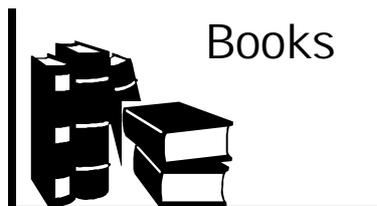
## Did you Know?

### Average pesticide residues which enters the infant's body through mother's milk (per day)

Pesticide	Amount of residue (%)	Daily intake ( $\mu$ gms)	Prescribed safe limit (FAO) ( $\mu$ gms)
DDT	0.30	26.25	100
HCH	0.124	108.5	40
Endosulphan	0.555	485.6	30
Tycophol	0.28	245	125

It is to be mentioned that in the year 2000 we had used nearly 4850 tonnes of endosulphan

Source : *National Centre for IPM, New Delhi.*



**NATURAL CROP PROTECTION IN THE TROPICS** by Gabriele Stoll, 2nd Edition, Margraf Verlag, Germany, PP. 376

This book presents practical information on natural crop protection techniques. The techniques provided here are from traditional and scientific sources and these are duly supported by case studies. This book addresses everyone engaged in supporting and empowering small farmers and working in the field of developing and promoting sustainable and organic agriculture.

The book is categorised into five chapters. The section on Insect pests (field and storage) gives detailed information about the pest and various control measures like natural enemies management and cultural practices, insect - controlling plants etc. The book also provides adequate information on methods of field and storage protection. The book also throws light on the areas for further research in developing natural crop protection practices for resource -

poor and organic farmers. The first edition of Natural Crop Protection was published in 1986 and has met wide acclaim. It has been translated into eight languages.

**Available from : Margraf Verlag, PO Box 1205, 97985 Weikersheim, Germany.**

**THE ORGANIC FARMING READER** by Claude Alvares, Vandana Shiva, Sultan Ismail, Bernard Declercq, Korah mathen and K. Vijayalaksmi, Other India Press, Goa, PP. 298

The Organic Farming Reader is one of the companion volumes of the Organic Farming Source Book, also published by the Other India Press. The reader has five sections which deal with different aspects of organic farming. The philosophy and ethics of organic farming. The regeneration of the soil. The crisis of biodiversity. Problems between human beings and insects and the warfare between them. The economics of organic farming.

**Price : Rs.150/-**

**Available from : OIB and CIKS, No. 47-C, Gandhi Mandapam Road, Kotturpuram, Chennai - 85.**

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