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## INDIGENOUS RICE FOR FILARIASIS CONTROL

Filariasis is a disease spread by mosquitoes. Even modern medicines do not have a complete cure for this disease. But, people believe that this disease could be cured by Siddha medicine. Mr. Murugadasan from the village Thiruppurambiam which is 5 kms from Kumbakonam says that filariasis could be cured by using the indigenous rice variety called “**Karungkuruvai**”.

According to him, the Karungkuruvai paddy is boiled with cactus milk (Thirugukallipal), cow’s milk and honey and made into a lehyam. This lehyam is stored in a mud pot. People who are afflicted with filariasis should have it for five days continuously and after an interval of three days, again for five days. During the intake of this medicine, ghee, milk, cereals and fried salt should be added to the diet. The method for preparing the lehyam using Karungkuruvai also finds a reference in the ancient tamil text “**Pulippani Vagadam 500**”. Mr. Ramu of the same village had already undergone this treatment 15 years back and has been cured.

### Karungkuruvai



Karungkuruvai is an indigenous paddy variety. This can be cultivated during the Kuruvai (*June 1 - August 31*) and Navarai (*December 15 - March 14*) crop seasons. The crop grows well on clayey, coarse and sandy clay soils. Normally, the crop grows to a height of 95.56 cm. The age of the crop is 120 – 125 days. Normally, 55 grains can be obtained from an ear head.

This paddy variety was originally cultivated near Kollidam and currently they do not have this variety. CIKS from its collection has given seeds of Karungkuruvai to a farmer Mr. Gunasekaran of this area for cultivation in 20 cents.

**Source :** Mr. Murugadasan, 2/34-D, South St., Thirupurambiam-612303.

**Compilation :** Subhashini Sridhar, Ashokkumar, CIKS, Sirkazhi.

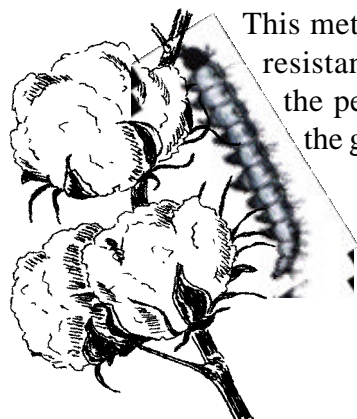
## LIST OF PESTICIDES THAT ARE BANNED IN SEVERAL OTHER COUNTRIES BUT STILL IN USE IN INDIA

Aluminium phosphide	Feharimol	Paraquat dichloride
Benomyl	Fenpropathrin	Phorate
Captan	Lindane	Phosphamidon
Carbaryl	Liuron	Pretilachor
Carbofuron	Malathion	Sodium cyanide
Carbosulfan	Methomyl	Triazopluos
Dicofol	Methoxy Ethyl	Tridemorph
DDT	Mercury Chloride	Thiomethon
Dimetheate	Methyl parathion	Thiram
Diuron	Monocrotophos	Zinc phosphide
Endosulfan	Oxyfluorfen	Ziram

Source : <http://greenpeaceindia.org>

### CONTROL OF BOLLWORM AND SUCKING PESTS IN COTTON

Bollworm and sucking pests are the major pests attacking cotton. Several expensive chemical pesticides have proved ineffective against these pests. The pest hinders the growth and leads to deformation of leaves and bolls. Karasanbhai, a farmer from the Bhavnagar of Gujarat overcomes this problem by spraying a mixture of 20 litres of sour buttermilk and 100 litres of water in 0.15 hectare of land.



This method increases the resistance of the crop to the pests and enhances the growth of the crop.

### REJUVENATING PADDY

Generally, paddy seedlings remain greenish for about 12 days after sowing. Later, it becomes pale due to deficiency of nutrients in their endosperm.

Shanmugam pillai, a farmer from the Kanyakumari district has arrived at a new solution for this problem. He crushes 3 kg leaves each of notch ( *Vitex negundo* ), tulsi ( *Ocimum sanctum* ) and Pungam ( *Pongamia pinnata* ) and collects the extract. He mixes 5 kg. of fresh cow dung with 15 litres of water and keeps it as such for 12 days. Later, the mixture is filtered and mixed with the plant extracts. 25 kgs of paddy seeds are treated in this solution. The seeds are then allowed to germinate and are transferred to the nursery beds after the plumule emerges.

This practice increases vigour of seedlings and also gives immunity against pest and diseases.

Source : *Honeybee*, Vol. 14, No.1, March 2003  
Compilation : T.D. Nirmala Devi

## TRAINING PROGRAMME ON ESTABLISHMENT OF CERTIFIED ORGANIC MANAGEMENT SYSTEMS

ENCON is a professional consultancy network actively involved in facilitating organic certification. It started its activities in 1989. ENCON is an active member of International Federation of Organic Agriculture Movements (IFOAM), and are engaged in the promotion of organic agriculture in Asia. ENCON is regularly conducting two training programmes every year on “International Training Programme on Establishment of Certified Organic Management Systems of Production, Processing and Marketing”. It is about to conduct its 7<sup>th</sup> International Training Programme in collaboration with Institute for Integrated Rural Development (IIRD) in Aurangabad city, Maharashtra. The course is of ten days duration from 8<sup>th</sup> to 17<sup>th</sup> March 2004.

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## REPORT ON ORGANIC FOODS

**Prepared by :** Industrial and Technical Consultancy Organisation of Tamilnadu Limited, 50-A, Greams Road, Chennai – 600 006.

This report provides a complete picture of organic farming and its various aspects. It consists of chapters dealing with soil fertility, composting, sustainable agricultural practices, need and objectives of organic farming, its types, organic nutrients etc. All the topics dealing with organic farming are clearly described. The consumer demand and the market potential for various organically produced foods are also provided.

The food products are divided into four categories by the organic markets namely fruits and vegetables, cereals, dairy produce and meat.

Issues related to certificates are clearly explained in the chapters. A case study on conversion to organic farming is also provided. The quality, appearance, taste, nutrition of organic foods are also provided which aids in better understanding of organic foods. The export market scope for organic foods and a list of such foods of trade value such as fresh fruits and vegetables, processed foods, sweeteners, grains, coffee, tea, spices, herbs, leguminous vegetables, meat are given.

India’s position in production and marketing of organic foods is also discussed. This report would serve as a tool for people interested in organic farming and marketing of organic foods.

*Compilation : T.D. Nirmala Devi*

### Biopesticide Consumption in India

Year	1996 – 97 (MT)	1997 – 98 (MT)	1998 – 99 (MT)	1999 – 00 (MT)	2000 – 01 (MT)
Bacillus thuringiensis (Bt)	33	41	71	135	132
Neem based insecticides	186	354	411	739	551
<b>Total</b>	<b>219</b>	<b>395</b>	<b>482</b>	<b>874</b>	<b>683</b>

*Source : [www.ncipm.org.in](http://www.ncipm.org.in)*

## WHY ORGANIC COTTON CULTIVATION ?

Cotton is one of the most important cash crop in India and plays a key role in the industrial and agricultural economy of the country. Indian textile industry being the country's second largest sector next to agriculture, provides direct and indirect employment to more than 50 million people.

India ranks first in the world in the total area under cotton cultivation, covering almost one-fourth of the world's area. According to the 1996-97 estimate, about 9 million hectares are covered under cotton in India, with a productivity of 327 kg/ha. However, India finds the third place in the global market next to China and USA in the production of cotton, due to low yield. India's production is nearly 1 ½ times lesser when compared to China's production. The production rate is stagnant at the rate of 2.2 million tonnes per year. The local consumption rate is exceeding the production rate.

Reasons for decline of India's hold on the world cotton market include :

- ✎ Imperfect methods of picking, cleaning, grading, roving and spinning into yarn
- ✎ Inadequate transfer of technology
- ✎ Delay in approval of new technologies
- ✎ Extensive adulteration and
- ✎ Pest and disease infestation.

The prime cause for the decline of yield in cotton is high levels of pest and insect infestation. Nearly, 45% of all pesticides and 58% of all insecticides are used on cotton. Amongst the catalogue of problems associated with the conventional cotton production, excessive use of pesticides is perhaps the most serious problem.

### Problems in conventional cotton production

Cotton production has become increasingly associated with severe negative environmental impacts, which include :

- |                            |                              |
|----------------------------|------------------------------|
| ✎ Reduced soil fertility   | ✎ Salinization               |
| ✎ Loss of bio-diversity    | ✎ Water pollution            |
| ✎ Changes in water balance | ✎ Pesticide related problems |
| ✎ High production cost and | ✎ Health hazards             |

Conventionally grown cotton uses more insecticides than any other crop. Every year, cotton producers around the world use more than 10% of the world's pesticides and nearly 25% of the world's insecticides. Pesticides used on cotton harm people, wildlife and the environment. These pesticides can poison farm workers, drift into neighbouring communities, contaminate ground and surface water and kill beneficial insects and soil micro-organisms.

### Problems Associated with Pesticides used in Conventional Cotton Production

- ✎ Nearly 25 million people (48 people / minute) around the world die every year due to pesticide poisoning.
- ✎ Of the total pesticides used in India, 44.5% of pesticides is used in cotton. This amounts to nearly 2462.13 crores.
- ✎ The ill effects of nearly 400 types of pesticides used in cotton is not known.



## Merits of Organic Cotton Cultivation

### 1. Environment friendly technology

- ✎ Organic cotton production relies on non-chemical inputs and will decrease pollution hazards.
- ✎ The use of natural products and bio-control agents for pest management does not carry risks of carcinogenic damage.
- ✎ Chances of pollution is very minimal or totally absent.
- ✎ Organic farming helps to restore or preserve the natural equilibrium between different components of the ecosystem.

### 2. Reduction in cost of cultivation

Organic farming creates rural employment and use of on-farm resources makes it more cost effective.

### 3. Management of Insecticide Resistance

## Comparison between organic and conventionally grown cotton

Organic cotton cultivation	Conventional cotton cultivation
<ul style="list-style-type: none"> <li>● Products such as farm yard manure, poultry waste and green manure are used to improve the soil fertility.</li> <li>● Biopesticides and other beneficial insects are used to control pests.</li> <li>● Organically cultivated cotton fetches high profit.</li> <li>● Cost of cultivation is lesser.</li> <li>● The oil obtained from cotton seeds and the fodder can be used to feed cattle.</li> <li>● This is an ecofriendly method.</li> </ul>	<ul style="list-style-type: none"> <li>● Large amounts of artificial pesticides are used. This pollutes the ground water.</li> <li>● Various types of pesticides are used which degrades the land.</li> <li>● Conventionally cultivated cotton fetches low profit.</li> <li>● Cost of cultivation is 80% higher than organic cotton cultivation.</li> <li>● The oil obtained from cotton seeds and the fodder is toxic to cattle.</li> <li>● This causes environmental pollution.</li> </ul>

*Compilation : T.D. Nirmala Devi*

## WEBSITE

[www.ncipm.org.in](http://www.ncipm.org.in) : This website provides data on the various pesticides used in India, pesticides banned in India, percentage increase in pesticide use through the years, the biopesticides used in India and many more.

# BIOLOGICAL CONTROL OF COCONUT PESTS




Coconut palm is prone to infestation by a large number of pests. The major pests attacking coconut in India, include the rhinoceros beetle, the red palm weevil and the leaf eating caterpillar.

## 1. Rhinoceros beetle



- *Oryctes rhinoceros*



### Symptoms

-  The beetle affects the fronds. Hence, when the frond opens, they show characteristic geometric cuts.
-  Infestation on spathe leads to drying of the inflorescence.
-  Repeated infestation to the growing points leads to the death of the seedling.





### Bio-control Measure

-  The dead and decaying organic debris in the vicinity of coconut plantations which acts as breeding grounds for the beetle should be disposed periodically.
-  One kg of castor cake should be soaked in 5 litres of water. This should be poured into 5 different earthen pots and placed in different regions of the orchard. This attracts the adult beetles and thus controls the population of Rhinoceros beetle. The castor cake extract has to be changed every month to obtain good results.





## 2. Red-palm weevil

- *Rhynchophorus ferrugineus*

### Symptoms

-  In the early stage, the infested palm shows yellowing and later wilting of leaves of inner and middle whorls.
-  Oozing out of a brownish viscous fluid from the small circular holes seen on the trunk of the tree.
-  Presence of chewed up fibres, cocoons, weevil etc. in the leaf axils.
-  Grawing and nibbling sound produced by the grub.



### Bio-control Measures

-  The palm crown has to be cleaned periodically to avoid decaying of organic debris in leaf axils.
-  Any cut which causes injury to the palm attracts weevil for egg laying. Hence, any cut or injuries caused should be properly treated.
-  When fronds are to be removed from the palm, it should be cut leaving a petiole length of 120 cm. This will avoid entry of the pest into the trunk portion.
-  Pieces of fresh coconut petioles smeared with fermented toddy serves as a weevil trap.



## 3. Leaf Eating caterpillar

- *Opisina arenosella*

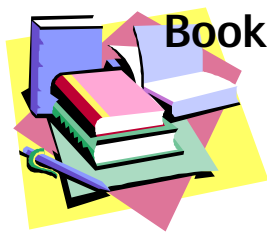
### Symptoms :

-  The caterpillar lives on the lower surface of leaflets in galleries made of excreta and silken web and feeds on the chlorophyll containing parenchymatous tissues.
-  Dried up and green patches appearing on the upper epidermis of leaves and presence of larval galleries, moults and pupal cases on the lower surface of the leaves are the major symptoms of infestation.

### Biocontrol Measures

-  Cutting and burning the heavily affected and dried outermost 2- 3 leaves.
-  Promising parasitoids such as *Perisierola nephantidis*, *Eriborus trochanteratus* and *Bracon brevicornis* can be released at the fixed dosages depending on the stages of the pest. The parasitoids has to be released before 8.00 a.m. or after 4.00 p.m. when there is no rain.

Ref : (1) *Thennai Sagupadi, 1994*  
(2) *Integrated Pest Management in Palms, 1997*  
(3) *Payirgalai Thakkum Poochigalum Peedaigalum, 2002*  
Compilation : T.D. Nirmala Devi



## Books & Educational Materials

### INVESTING IN INDIGENOUS KNOWLEDGE



In the long run, farmers and the people in the tribal communities have been the conservers of biodiversity and proud owners of indigenous knowledge and traditional practices.

Today, efforts are being made to document the indigenous knowledge through biodiversity registers. Farmers have played a key role in retaining several

sustainable agricultural practices and indigenous knowledge.

This book entitled “INVESTING in indigenous knowledge” is a means of retrieving the farmers knowledge and acknowledging them. The book contains sustainable agricultural practices, participatory methods of crop improvement, farmers experiences, seed treatment techniques, various germination tests, pests and diseases attacking paddy and the non-chemical pest management methods, participatory varietal selection, crop nutrition, traditional seed processing and storage techniques. It provides practical methodologies that are directly applicable on the field by the farmers and research workers.

This book would serve as a good source material for farmers, NGOs and people interested in traditional agricultural practices.

**Price : Not indicated**

**Available from : Green Foundation, No. 570/1, Padmashri Nilaya, 3<sup>rd</sup> Main, 4<sup>th</sup> Cross, N.S. Palya, BIM 2<sup>nd</sup> Stage, Bangalore – 560 076, Ph : 080-6784509, e-mail : [greenfound@vsnl.net](mailto:greenfound@vsnl.net)**

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