UNITED NATIONS ENVIRONMENT PROGRAMME ▪ STOCKHOLM CONVENTION

UNEP

联合国环境规划署
Programme des Nations Unis pour l'Environnement
Programa de las Naciones Unidas para el Medio Ambiente
Программа ООН по окружающей среде (ЮНЕП)

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**Our Reference:**
**Your Reference:**

**Date: 19 December 2008**
**File: SEE/pw**

**TO:** Stockholm Convention Parties Official Contact Points
Observers at the third meeting of the Conference of the Parties

**Subject:** Request for available information on a request from India for extension of a specific exemption on the production and use of DDT as an intermediate in the production of dicofol

Dear Representative,

At its third session held on 30 April – 4 May 2007 in Dakar, Senegal, the Conference of the Parties, in its decision SC-3/3 established the revised review process for entries in the Register of Specific Exemptions that was adopted at the first meeting of the Parties. In this revised process, a Party having a specific exemption in Annex A or B and wishing to extend that exemption beyond the end of the agreed five years, shall submit a report to the Secretariat justifying its continued need for registration of that exemption. The Secretariat shall then circulate any request report for extension of a specific exemption to all Parties and observers and request available information relevant to the report.

In fulfilling the process, the Secretariat is hereby circulating the only extension request report received from India for the continued production and use of DDT as an intermediate in the production of dicofol as established in Part I of Annex B of the Convention. The report from India is attached for your information.

The Secretariat is requesting submittal of other available information relevant to the report, as far as possible in the English language, on or before 30 January, 2009.

The Secretariat would be grateful for your consideration of this request.

Yours sincerely,

Donald Cooper
Executive Secretary
Secretariat of the Stockholm Convention on
Persistent Organic Pollutants

Attachment: Request report from India for extension of the specific exemption for DDT production and use

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**Permanent Mission of India**
**to the United Nations Offices,**
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**No. GEN/PMI/551/01/2005** **May 2, 2008**

The Permanent Mission of India to the United Nations Offices and other International Organisations in Geneva presents its compliments to the Secretariat of the Stockholm Convention of the United Nations Environment Programme (UNEP) and has the honour to enclose Government of India's request for Extension of Specific Exemption for use of DDT (as intermediate) for Dicofol Production.

2 The Permanent Mission of India to the United Nations Offices and other International Organisations in Geneva avails itself of this opportunity to renew to the Stockholm Convention of the United Nations Environment Programme the assurances of its highest consideration.

United Nations Environment Programme,
**[Attn : Executive Director,**
**Secretariat of the Stockholm Convention],**
11-13, Chemin des Anemones,
1219, Chatelaine,
Geneva
**(Fax No. 022-9178098)**

# USAGE OF DICOFOL FOR MANAGEMENT OF PHYTOPHAGOUS MITES IN INDIAN AGRICULTURE.

## INTRODUCTION

Mites are closely related to insects, but belongs to a different class of arthropods, the Arachnida. Mites are small, soft skinned organisms with a chitinuous skeleton. Mites are characterized mostly oval or flat shaped body, absence of wings & antennae. The adults generally posses four pairs of legs. They are approximately 0.5 mm in size. Phytophagous mites are important pests of Agricultural crops. Mites often spin extensive cobwebs under the leaves or make galls on shoots & leaves in which they feed and live. Mites feed by sucking plant sap causing discoloration and wilting of leaves, early fall of leaves and fruits, causes injury to buds, flowers, fruits, twigs and leaves and eventually yield loss or crop falure.

## TYPES OF PHYTOPHAGOUS MITES

There are mainly five types of mites, namely

1. Red Spider Mite - They can be recognized by their oval shaped red color body and spin cobweb under the leaves and feeding causes speckle formation on leaves.

2. Scarlet Mite- Scarlet red colored flat body, very similar to Red spider mine but they cannot spin web.

3. Purple Mite- Spindle shaped purple colour and five longitudinal white waxy ridges on the dorsal side of the body.

4. Pink Mite- Orange colored and carrot shaped body, posses only two pairs or legs. Feeding induces gall formation on shoots, fruits and leaves in plants.

5. Yellow Mite- Yellow colored, flat body, minute size.

Mostly dry and warm weather favour the development of mite populations. In hot regions mites reproduce throughout the year. Pink mites prefer warm and humid climate. As a whole mite infestations are abundant in tropical climatic condition.

## MITE INFESTATION SCENARIO IN INDIAN AGRICULTURE

In India major group of crops like fruits, vegetables, chili, cotton, tea, coffee and ornamental plants are severely infested every year by various types of mites. Total acreages of these crops in India is to the tune of 12 million hectare. Approximate estimated annual loss of yield in India due to mite infestation is to the tune of 18-20%

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## CHEMICAL CONTROL OF PHYTOPHAGOUS MITES IN INDIAN AGRICULTURE

In India Dicofol is a registered miticide for mite control in field crops. Dicofol is a non persistent, non-systemic organochlorine miticide with strong ovicidal action. It interfere the transmission of nerve impulse and disrupt nervous system of mite pests.

Dicofol is usually synthesized from technical DDT. Dicofol technical is a red brown or amber viscous liquid. In India through modern process, Dicofol Technical grade is produced which contain less than 0.1% DDT. Dicofol is classified by the WHO as class III, having acute oral LD50(Rat)>500 mg/kg bw. Dicofol is less toxic to warm blooded animals.

Dicofol is slightly toxic to birds and non-toxic to honey bees and other pllinators and does not cause harm to other beneficial insect predators. Dicofol is non-persistent in the environment and does not posses any POP characters.

Currently Dicofol Technical producing countries are USA (Rohm & Haas), India (Hndustan Insecticides Limited), Spain (Lanico) and Israel (Makhteshim-Agan).

## ROLE OF DICOFOL IN MITE MANAGEMENT IN INDIAN AGRICULTURE.

In India Dicofol is considered as most important and major tool for protection of agricultural field crops from mite infestation. Dicfol is a broad spectrum miticide. Dicofol is highly effective in controlling all types of mites like red spider mites, scarlet mites,pink mites or gall mites, purple mites and yellow mites which causes severe economic damages to the valued crops in India.

In India Dicofol is used in wide range of crops like Tea, Citrus, Litchi, Mango, Arecanut, Coconut, Apple, Pear, Figs, Cherries, Plums, Peaches, Apricot, Cotton, Sugarcane, Jute, Brinjal, Potato, Tomato, Chiliies, Cucurbits, Beans, Okra, Ornamental plants, etc.

Dicofol gives high kill against most species of agricultural mites. Virtually Dicofol effects on all the developmental stages of mites and it has strong ovicidal action too. Dicofol demonstrates better mite control activities at warmer, hot and humid tropical climate. Dicofol as miticide offers proven, economical control on mites on various crops like tea and coffee, fruits and vegetables, chili, cotton, etc. without harm to beneficial insect predators.

In India Dicofol is used as foliar spray in the formulatin of 18.5% emulsifiable concentrates (EC) Dicofol 18.5 EC is applied @ 1.25 Lt./hectare per spray. In India approximate annual consumption of Dicofol Technical is to the tune of 200-250MT.

## SPECIAL ADVNTAGES OF DICOFOL USE IN MITES OF AGRICUCLURAL CROPS.

1. Dicofol control all types of mites & their eggs. It kills mites by strong contact action. It is broad spectrum in nature.

2. Dicofol controls different stages of mites & thus checks population build up to economic injury level.

3. Dicofol also controls mites resistant to OP group of miticides.

4. Dicofol controls newly hatched nymphs up to a considerable time.

5. Dicofol is safe to men, animal & to the environment.

6. Dicofol is lethal to mite pests but harmless to natural enemies of mites, pollinating insects including honey bees.

7. Dicofol does not cause any phytotoxic effect on crops.

8. Dicofol is compatible with other pesticides.

9. Dicofol application is recommended for wide range of field crops.

10. Dicofol is the most cost effective miticide in India.

## ALTERNATIVES OF DICOFOL AS SPECIFIC MITICIDE.

**Propergite** – A non systemic miticide with contact action. Control phytophagous mites on variety of crops. Highly toxic to fish, slightly toxic to honeybees. In India Progergite is used as foliar spray in the formulation of 57 % emulsifiable concentrates (EC). Propergite 57 EC is applied @ 1.00 Lt./hectare per spray. In India approximate annual consumption of Propergite technical is to the tune of 85 MT.

**Fenazaquin** – A non systemic miticide with contact action & good knockdown effect & ovicidal action. Control phytophagous mites on variety of crops. High mammalian toxicity (Acute Oral LD50-134 mg/Kg bw) Highly toxic to fish, slightly toxic to honeybees. In India Fenazaquin is used as foliar spray in the formulation of 10% emulsifiable concentrates (EC) Fenazaquin EC is applied @ 1.00 Lt./hectare per spray. In India approximate annual consumption of Fenazaquin technical is to the tune of 5 MT.

## AFFORDABILITY OF DICOFOL AND ITS ALTERNATIVES

The following data, obtained from averaging the cost of Dicofol & its alternatives marketed in India, reveal that compared to the cost of per hectare per spray application of Dicofol, the other alternative cost are more than quadruple.

| Miticides in India | Cost per hectare per spray |
|---|---|
| DICOFOL –18.5 EC | US $ - 5.9 |
| PROPERGITE – 57 EC | US $ - 20 |
| FENAZAQUIN – 10 EC | US $ - 35 |

## CONCLUSION

Looking at the aforementioned data, the place of Dicofol as miticide in India is of great significance and importance because of its effectiveness & affordability. Annual consumption of Dicofol technical is to the tune of 200-250 MT as compared to the alternatives (all 2 put together ) which comes to around 90 MT & also much cheaper than its alternatives. **Hence, Dicofol as miticide is essential for the mite pest management in India Agriculture.**