

*Jatropha curcas*, is projected for biofuel source considering the limitation of using edible oils in India. At present it seems to be less prone to pest damage, perhaps due to use of wild varieties as live fence in scattered patches. Out of many insects found to occur, leaf webber cum fruit borer, *Pampelia* (*Salebria*) *morosalis* (SaalmUller) (Pyralidae: Lepidopter), tailed mealy bugs *Ferrisia* (*Ferrisiana*) *virgata* (Ckll.) (Pseudococcidae: Hemiptera), Scutellarid bugs, *Scutellera nobilis* (Fabricious) and *Chrysocoris purpureus* (Westw.) (Scutelleridae: Hemiptera) occur throughout the year under tropical conditions and causes serious damage to the capsules. The greenish brown/brownish green *P.morosalis* caterpillar webs the leaves and feeds on leaves remaining in the leaf web. At flowering bores into peduncle and capsule which show galleries made of silk and frass. *F.virgata* remains clustering upon the terminal shoots, leaves, flowers and fruits and sucks the sap causing crinkling of foliage and ill development of capsules. *S.nobilis* and *C.purpureous* desap the leaves, flowers and unripe fruits and causes flower fall, premature abortion and development of malformed hollow seeds. With taking up *Jatropha* as regular monocrop in continuous stretches recently with high yielding cultivars, outbreak of pests can be anticipated.

## Section I

### Surveys of Invasive and Emerging Pests

#### OCCURRENCE OF CAPSULE PEST COMPLEX ON BIOFUEL, JATROPHA IN INDIA: PEST RISK ASSESSMENT

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A one time roving survey was undertaken in 30 selected locations in Tamil Nadu and one location in Kerala states. Five sites were selected in each field. In each site ten plants selected at random were observed for the incidence of the pests. The incidence of *P.morosalis*, *scutellarid* bugs and *F.virgata* was observed in 8, 26 and 10 locations respectively. The level of incidence was 0.2-30.2, 0.2-1.4 and 0.2- 0.8 per cent respectively. The sporadic and low level of incidence is due to scattered nature of plants in hedges and early stage of extensive upcoming plantations. Out of 146 million hectares of wasteland, it is proposed to reclaim 33 million hectares for *Jatropha* cultivation, apart from the arable land that will be used for *Jatropha* cultivation as sole or intercrop.

The Planning Commission recommended allocation of INR 1400 crores (US \$ 3,000 million) for the promotion of *Jatropha* cultivation for three years. Any major intervention like extension of area, cultivation as sole crop, use of high yielding cultivar, application of fertilizers, and irrigation is likely to cause pest build up. Use of synthetic pyrethroids on other crops is likely to cause outbreak of *F.virgata*. Considering the various options available for the management of these pests like, biocontrol agents, effective chemistries, scope for behavioural

manipulations, these pests pose low risk at present. However the cost benefit ratio is an important factor is to be reckoned.

Table 1. Surveillance for the incidence of pests affecting capsule in *Jatropha*. - incidence (%)

1.	Location	District	Species	Crop	<i>P.moras alis</i>	<i>Sutellarid bugs</i>	<i>F.virgata</i>
1.	Vandi peiryar	Idukki, Kerala	<i>J.curcas</i>	Observational plot- 30 cents	Nil	0.2	Nil
2.	Lower camp	Theni	<i>J.curcas</i>	Continuous Hedge	Nil	0.6	0.2
3.	Gudalur	Theni	<i>J.curcas</i>	Discontinuous Hedge	Nil	0.4	Nil
4.	Cumbum	Theni	<i>J.curcas</i> <i>J.gossypifolia</i>	Discontinuous Hedge	Nil	0.2	0.2
5.	Palayam	Theni	<i>J.curcas</i> <i>J.gossypifolia</i>	Discontinuous hedge	Nil	0.2	Nil
6.	Chinna manur	Theni	<i>J.curcas</i> <i>J.gossypifolia</i>	Discontinuous Hedge	Nil	0.4	Nil
7.	Sippalakottai	Theni	<i>J.curcas</i> <i>J.gossypifolia</i>	8 holdings- one year old 18 acres	Nil	Nil	Nil
8.	Devaram	Theni	<i>J.curcas</i>	18 holdings- one year old- 110 acres	Nil	1.2	Nil
9.	Theni	Theni	<i>J.curcas</i>	Discontinuous Hedge	Nil	0.2	Nil
10	Periyakulam	Theni	<i>J.curcas</i> <i>J.gossypifolia</i>	Discontinuous Hedge	Nil	0.2	0.2
11	Gengupattay	Dindigul	<i>J.curcas</i>	Single holding- 100acres	2.2	Nil -	- Nil

12	Batlagundu	Dindigul	<i>J. curcas</i> , <i>J. gossypifolia</i>	Hedge-sparse	Nil	Nil	Nil
13	Sempatty	Dindigul	<i>J. curcas</i>	Hedge-sparse	Nil	0.2	Nil
14	Kannivadi	Dindigul	<i>J. curcas</i>	Hedge-sparse	Nil	Nil	0.2
15	Oddanchatram	Dindigul	<i>J. curcas</i> <i>J. gossypifolia</i>	Hedge-sparse	Nil	0.2	Nil
16	Dhara puram	Erode	<i>J. curcas</i> <i>J. gossypifolia</i>	Hedge-sparse	Nil	0.2	Nil
17	Mettukadai	Coimbatore	<i>J. curcas</i>	Continuous Hedge	3.2	0.6	Nil
18	Chem mipalalyam	Coimbatore	<i>J. curcas</i>	Abandoned nurse	1.2	0.4	Nil
19	Palladam	Coimbatore	<i>J. curcas</i> <i>J. gossypifolia</i>	Hedge-sparse	Nil	0.2	0.2
20	Coimbatore	Coimbatore	<i>J. curcas</i> <i>J. gossypifolia</i>	Continuous Hedge	0.6	1.4	1.0
21	Thondamuthur	Coimbatore	<i>J. curcas</i>	Continuous Hedge	0.4	0.8	0.4
22	Alandurai	Coimbatore	<i>J. curcas</i>	Continuous Hedge	0.2	0.2	0.6
23	Poluvalmpatty	Coimbatore	<i>J. curcas</i>	Continuous Hedge	0.2	0.8	0.4
24	Thennamanalur	Coimbatore	<i>J. curcas</i>	Continuous Hedge	Nil	Nil	0.2
25	Thudiyalur	Coimbatore	<i>J. curcas</i>	Continuous Hedge	Nil	0.4-pl;	0.8
26	Devipattanam	Thirunelveli Dt	<i>J. curcas</i>	One holding- 2 acres	Nil	Nil	0.2
27	Kovilur	Virudhunagar	<i>J. curcas</i>	School boundary	Nil	Nil	Nil

28	Muhavoor	Virudhunagar	<i>J. curcas</i>	Continuous Hedge	Nil	0.2	Nil
29	Dhalavaiapuram	Virudhunagar	<i>J. curcas</i>	Tank bund	Nil	0.2	Nil
30	Solaiseri	Virudhunagar	<i>J. curcas</i>	Tank bund/Mini plant lot	Nil	0.2	0.2
31	Moovaraivendran	Virudhunagar	<i>J. curcas</i>	Single holding-5 acres- rain fed-two years old	0.4	0.8	0.2
<i>J.gossypifolia</i> - No pest incidence- Voluntary crop / self spread							