

# Achievements of the Campaign for the Control of the Groundnut Red Hairy Caterpillar, *Amsacta albistriga* M. in Madurai Division (Madras State)

by  
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**Introduction:** Groundnut (*Arachis hypogaea* Linn.) is one of the main cash crops of Madras State grown over an area of about 20,66,000 acres. The major insect pest of the crop is the red hairy caterpillar, *Amsacta albistriga* M. (Arctiidae-Lepidoptera) and its occurrence is more or less an annual feature in most of the red sandy loam tracts of the South. The pest is polyphagous but it is particularly destructive to groundnut. The incidence of the pest varies from tract to tract as it is influenced to a large extent by the local rainfall and agricultural practices. According to the peculiarities in the seasonal and climatic conditions, the areas chronically infested by the pest has been broadly classified into three zones viz., (i) South Arcot, North Arcot and Salem (June-October), (ii) Madurai and Ramanathapuram (August-October) and (iii) Pollachi (Coimbatore District) (May-June) by Nagarajan and Ramachandran (1958). In Madurai region with the receipt of showers the sowing of the dry crops are extended up to August-September. Concomitant with this the emergence of the moths takes place and the pest assumes alarming proportions by August-October. By dusting BHC 10% within a week after the emergence of the moth, the pest can be annihilated completely, provided the control measures are taken by the ryots on a co-operative basis. The grown up caterpillars can be controlled by dusting Toxaphene 20% or by spraying parathion (Nagarajan *et al.* 1957; Nagarajan and Ramachandran 1958).

During the recent years mass scale control of the pest has been undertaken by the Government of Madras with the active co-operation of the farmers and two distinct methods of mass control have been taken up by the State Department of Agriculture. They are: (i) aerial spraying undertaken for the first time in Pollachi area in 1961 and (ii) organisation of field scale control measures by the Departmental staff. The object of the present paper is to furnish information on the latter aspect of control measures taken against the pest in Madurai region during the years 1961 and 1962, for the benefit of effective planning in taking up the control measures in the future.

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\*\* This paper is based on the experiences gained in organising mass scale campaigns for the control of the groundnut hairy caterpillar in Madurai region during the years 1961 and 1962 when the author was the Deputy Director of Agriculture, Madurai who also was in-charge of the entire pest control operations as Campaign Officer. But for the active co-operation extended to him by the officers and staff of the Department at various levels and also the officials of the Revenue and Community Development Departments and the farmers of the area this campaign would not have been a successful one.

**Organisation of the Campaign:** The campaign was organised by the officers of the Agricultural Department during 1961 and 1962 with the active co-operation and support from the members of the Revenue and Rural Development as well as from Panchayat Unions and also members of the public.

As a first step towards the organisation of the campaign, details of the places where the intensity of attack of the pest was severe during 1960 were collected. Campaign meetings of the Panchayat Unions were convened and addressed and arrangements made to produce cheap utility dusters for distribution. The area proposed to be treated against the pest was assessed. The District Agricultural Officers, Crop & Plant Protection Officers, Seed Development Officer and others were in charge of the campaign with 1000 acres under the supervision of each of the officers. The District Agricultural Officer was in overall charge of the work in his jurisdiction and the Deputy Director of Agriculture was the Officer in charge of the entire work in the division.

The areas where the pest appeared year after year were pin-pointed and mapped out to take control measures. Thus with the campaign gaining momentum the following steps were taken systematically in all the places where the pest incidence was reported in the early years.

a) In all villages, Plant Protection Committees were formed with Block officials, Panchayat Presidents, leading ryots, social workers and departmental subordinates.

(b) Wide publicity was given by the extension staff on the life-cycle of the insect and the recommended control measures as well as the various concessions provided by the Government.

(c) Large number of meetings were held in the villages

(d) Hand bills were prepared in local languages and distributed

(e) Posters and charts were prepared and exhibited in *Shandys*, *Chavadies*, Schools and Panchayat Offices.

(f) Cinema slides warning the ryots of the impending attack of the pest and control measures to be taken were exhibited in all important centres.

(g) The departmental propaganda van screened films in all centres.

(h) Meetings of the Elementary school teachers in each Union were convened by the respective Union Chairman and the campaign work explained.

(i) Songs in popular tunes were printed and distributed in all the villages.

(j) Scripts for dramas were composed and enacted at different centres.

(k) Flash cards and flannel graphs were prepared and extensively utilised for the campaign.

(l) Pilot light traps were set up in all the endemic areas and daily reports on the results of pilot traps were called for and closely watched.

(m) The collection of pupae was done on a large scale by giving some incentive to school children by way of distribution of sweets.

**Observations made in the Campaign work:** In the campaign for the control of the pest in Madurai region interesting observations were made on the pest as well as the working of the campaign which are given in brief below.

The first emergence of the moths of *Amsacta* spp. was reported on 2-8-1961 and the last emergence was noticed on 18-12-1961 in Dindigul division. The first and last emergences of the moth were noticed on 13-8-1961 and 30-9-1961 respectively in Madurai division and on 18-8-1961 in Usilampatti division. It is in general agreement with the observations made by Nagarajan and Ramachandran (1958). The emergence of moths in Arombali area in Nagercoil district was noted in November 1961. The emergences of moths were noticed in waves.

The emergence of moths was noticed invariably two or three days after heavy showers, the maximum being on the third day. Ramachandra Rao (1910) has stated that the moths emerge on the first or the second night following such heavy showers. The rains in extensive areas in Madurai district were mostly localized and hence the emergence of moths varied from place to place throughout the campaign period in the district.

Moths were found to be attracted by all kinds of lights and greater intensity of lights attracted more moths. On moonlight nights, the effectiveness of the light traps was less. During heavy emergence period some one will have to constantly attend to the collection of the trapped moths in the light traps as within a shorter period a large number of moths will be caught in the trap. One ingenious method devised by some ryots in Shanarpatti area was the using of discarded cycle or car tyres for burning them to serve as light traps. One discarded cycle tyre costing about 15 nP burns for about 2½ hours. The most effective light trapping observed was propping up a bright light at a height of 10-12 feet and setting bonfires beneath it.

Moths got attracted to light mostly from 7 to 10 p.m. and less thereafter. This may be due to the fact that large number of moths emerge from the soil in the evening at about 4 p.m. and get attracted to the light before 10 p.m.

Both the species of *Amsacta*, viz., *Amsacta albistriga* M. and *Amsacta moorei* M. were found to emerge simultaneously and it was very common to see one species mating with the other. So much so, in the population of the caterpillars different shades of dark bands on the body were observed.

The eggs were laid on weeds, walls, stones, soil, etc. and preferably on broad leaved plants like *Abutilon*, Cotton, *Jatropha*, etc. Collection of egg masses were mostly done by labour employed for weeding and hoeing.

Caterpillars from fields treated with insecticides were found to burrow into the soil and die after pupation. Dusting BHC 10% was effective in killing 5 day old caterpillars and beyond that stage spraying of parathion at higher



concentration only was effective. The grown up caterpillars were found to congregate on the redgram plants during the hottest part of the day. This aspect was taken advantage of to collect and destroy them. They were also hand-picked and destroyed by immersing in cow dung solution.

**Achievements of the Campaign:** During the first year of the campaign in 1961 out of the 27,169 acres affected by the pest in Madurai region (Usilampatti, Madurai, Dindigul, Sivagana, Sattur and Nagercoil) 25,280 acres were treated and the savings being about 7640 tons of groundnut costing about Rs. 45,21,845. In this successful campaign the Government contribution by way of 50% subsidised sale of pesticides was Rs. 51,413-70 nP. for the Madurai division which worked out to Rs. 1-12 nP. per acre.

With the experience gained in successfully steering the campaign during 1961 preparations were made on a planned scale sufficiently in advance to combat the pest during 1962. Out of the 62,752 acres affected by the pest, 48,464 acres were treated in the division. The Government contribution by way of 50% subsidised sale of pesticides was Rs. 87,212-66 nP. for the entire division, the savings being 6384 Tonnes 750 Kg. costing about Rs. 36,09,575. This worked out to Rs. 1-39 nP. per acre. This low cost of preventive measures is an index for the efficiency of the campaign gained adopting mechanical methods such as collection and destruction of egg masses, caterpillars, pupae and moths instead of depending entirely on insecticides for the eradication of the pest. However, it is needless to emphasise here that unless such organised effort is pursued for few more years the complete eradication of the pest may not be feasible.

#### REFERENCES

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