Summary: Vellarimathan – a cucurbit from Malabar is found to be a prolific, quick-growing vegetable suited for all seasons and soils of low fertility. Its high yield, easy digestibility and bulk are its noteworthy features. It is therefore recommended for wide cultivation in all parts of the province like the other cucurbits.

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A note on chillies thrips control in seed-bed areas in Guntur district

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Chilli Crop in Guntur: There is an area of 67,415 acres under chillies in Guntur district, distributed over Guntur. Sattenapalli, Gurzala (Palnad) and Narasaraopet taluqs. Out of this, Guntur taluq claims an area of 40,000 acres. The crop is grown under rainfed conditions in the mid season, July to February. This is one of the most important commercial spice crops of this district and the income from an acre at present market rates, ranges from anything between Rs. 750/- to Rs. 1,000/-

There are three or four insect pests on this crop and among them, the thrips *(Scirtothrips dorsalis,* Hood*)* is the most important one. It is known to appear since 1920 and is found throughout the

chilli area. Thrips occur in seed beds and as well as on the crop. They feed on the tender portions of the plant, scraping the surface tissues and sucking the plant sap. As a result the tender leaves curl up, get deformed and in bad cases wither. This is referred to as '*Madutha Tegulu*' (Leaf Curl) during the crinkled stage and as '*Korivi Tegulu*' (Burnt faggot) in extreme dried-up cases. These insects also feed sometimes on the flower buds which may drop off and on the tissues of fruits. However, serious damage is done only to the foliage. In heavy infections they cause wholesale destruction of the crop. The average loss may be anything between 30 to 50%. In previous years, the damage caused by thrips was so heavy that it was even thought that there might not be a chlli market at Guntur. The area under the crop dwindled considerably due to this pest.

The insects have alternate host plants like groundnut, cotton, castor, mango, beans and pomegranate which are also widely grown in this district. The dispersal of the pest from field to field is mainly by wind currents. The adult insect is a tiny creature about 1/25" long, yellowish brown in colour and elongate in shape. This has four wings with a narrow membrane surrounded by a broad fringe of hairs (the characteristic feature of order *Thysanoptera*). They have mouth parts adopted for lacerating the soft parts of the plants and sucking the sap, a stage intermediate between chewing and sucking types. Female thrips lay their eggs on the leaves and in four or five days the young ones hatch out and begin to feed on the tender shoots. They exhibit only a partial metamorphosis *(Heterometabola)* and the young ones resemble the adults in form with no wings. They become adults in six to seven days.

This year (1949) the thrips appeared very early in the nurseries. The seedlings which were already hard hit due to the continuous rains of August, could not survive the invasion of these tiny insects. The young leaves crinkled and began to dry up. The rains received may be expected to act against the pest by washing down the colonies from the foliage. But the thick stand of seedlings in the seed-beds and the overlapping of leaves prevented the rain from washing off the colonies from the foliage.

Hitherto control measures to check this pest were spraying tobacco decoction or dusting tobacco dust at the rate of six pounds to a cent of land. The present stringent excise-laws prevent the layman from purchasing and stocking tobacco leaves or refuse. It has become rather a difficult job to procure tobacco leaves, prepare

the dust and stock it without the fear of loss of the nicotine content and distribute it through the Agricultural Department to the chilli growers. With the advent of new insecticides into the field of entomolgy, large-scale trials of Gammexane D. O. 25 have been made in Guntur taluk, dusting at the rate of one pound to a cent of nursery. The villages of Lalpuram, Guntur, Yenamadala, Yengalayapalem, Nallapad, Nallayapalem etc., in Guntur taluk where dustings were done intensively, have shown remarkable results. The pest almost disappeared within a week after dusting and the seedling became perfectly healthy and were quite fit for transplanting after the usual nursery period of fortyfive to fifty days. Gammexane is capable of producing more spectacular results than tobacco dust and wins the confidence the ryots immediately.

Ryots were convinced with the spectacular results and the efficacy of the chemical brought into the field by the Department. A novel method was adopted of dusting the chemical with ordinary flour sieves of fine mesh which are available in every house. Though the chemical has to be used at a higher dose with the sieve the work could be done with greater ease and without waiting for dusters to be got from the Department and passed on from ryot to ryot. The demand for the chemical which started from mere pounds immediately rose up to tons. A total quantity of nearly two tons was sold to ryots in Guntur taluq itself. This dust, covering more than forty acres of seed beds, made the seedlings suffice to transplant more than 2,200 acres, this means, we have covered half of the area of Guntur taluq and we hope that for the next season the whole area under chilli crop in this district would be treated with this insecticide. The villagers of Lalpuram, Mallayapalem, Kornepadu, Nallapadu, Vengalayapalem, Yenamadala, Kondaepudi, Thullur, Mutlur, Tadikonde, Narakodur, Etukuru, Kovelamudi, Guntur, Budampadu etc., gave their whole-hearted co-operation and successfully carried through the campaign. In some villages where the ryots had not taken up dustings of chilli nurseries, the seedlings had completely failed and consequently sufficient seedlings were not available for planting the usual area. As a result of this, ryots had to purchase seedlings sufficient to plant an acre at the rate of Rs. 100 to Rs. 150/-. For want of seedlings, this year the crop was drilled in some villages.

The Departmental strain 308 (otherwise known as G. 1 chillies) has only a partial tolerance for attack by thrips and in years of heavy infestation, it has also to be dusted with gammexane to save the crop.

The gammexane dust supplied last year by the Imperial Chemical Industries (India) Limited was lacking in proper adhesion when used with transplanted crop. Agrocide at the rate of one ounce per gallon of water can be used wherever water is available for spraying, but for absolutely dry tracts, BHC will have to be continued with a proper diluent for easily sticking on to the leaves, especially on the under surface where thrips are found most. The manufacturers have been contacted for a suitable formulation for this.

Economics: To treat two cents of nursery area (seedlings to transplant one acre):—

1. Cost of Gammexane 2·025—2 lb @ 7 annas per lb.	Rs.	0—14—0
2. Labour—½ Man @ Rs. 1—8—0 per day per man	Rs.	0—12—0
Total	Rs.	1—10—0

A sum of Rs. 1—10—0 would thus save a crop worth Rs. 50—0—0 assessing the damage at 50%.

To spray one acre of transplanted crop :—

1. Cost of 3 lb. of Agrocide @ Rs. 2—10—0 per lb	Rs.	7—14—0
2. Labour for spraying, 3 men @ Rs. 1—8—0 per man per day	Rs.	4—8—0
	Rs.	12—6—0

The effect of this is the saving of a crop which would normally yield about 1,000 lb. per acre as against the 300 lb. which an affected crop would yield. The present price of chillies is high and a candy of 500 lb. is sold at Rs. 540/-. So the saving per acre would be Rs. 500/- with the present value for chillies.