

**Summary of the results of the Korra trial plots in Kurnool and  
Cuddapah districts.—1935—'36.**

*Percentage yield of grain over control.*

Taluk.	Place.	Strains.						Whether signific- ant or not.	Criti- cal differ- ence.
		Local (control).	No. 43.	No. 69.	No. 125.	No. 132.	No. 140.		
Nandyal.	Kanala.	100	112.0	120.0	129.0	143.5	118.5	Yes.	20.55
Giddalur.		100	77.0	81.0	92.5	82.0	68.0	Yes.	19.38
do.	Cambum.	100	82.5	111.0	123.0	125.0	125.0	No.	
Kurnool.	Gudur.	100	130.0	92.0	137.0	107.0	76.0	Yes.	16.73
Cuddapah.	Allanikhanpalli.	100	95.0	141.0	139.0	156.0	125.5	Yes.	6.46
Nandalur.	Hastavaram.	100	181.0	169.0	178.5	178.5	202.5	Yes.	16.50
Proddatur.	Korrapad.	100	91.7	101.7	101.7	92.0	92.0	No.	
do.	Peddasettipalli.	100	144.5	81.0	111.0	36.5	103.0	Yes.	13.22

Out of the 11 trials conducted, in *Jonna* and eight trials in *Korra*, there was a significant difference in six cases in the former and six in the latter. These results would indicate the variations in yields of the different strains due to variations in soil fertility. The differential response of the same strain at the different centres is also apparent in both the crops. It is clear from these results that in both *Korra* and *Jonna* crops, a cosmopolitan type of strain satisfying the requirements of both the districts, covering a wide range of soil variation, is practically a difficult object to achieve. But on the other hand by a study of the results of systematically conducted trial plots of the several strains, it might be possible to fix a type, suited to each of the localities. In addition to this, these trials would mark out the different Zones of varying cropping powers; armed with this knowledge of the relation of the several strains to the different localities, the question of spreading and popularising a strain in such well-established zones, is much simplified.

The above results are only those of one year. It is proposed to conduct these trials for two more seasons with a view to acquire information regarding the relation of these strains not only to changes in soil variation but also their relation to seasonal variation.

## Research Notes.

### A Note on the occurrence of *Pemphres Affinis* on *Hibiscus esculentus* in Malabar.

During my work at the Agricultural Research Station, Taliparamba in 1933, I observed the presence of *Pemphres affinis* adults on almost all *Hibiscus esculentus* plants found on the Farm. By keeping the stems, adult insects were also reared out. With a view to ascertain whether the insect was attacking cotton or was only a casual visitor to the *Hibiscus esculentus* plants a minute examination of all the varieties of cotton—*Uganda*, *Buganda*, *Durango*, *Zululand Hybrid*, and *Karunganni*—was made. It was an agreeable surprise to find that all the cotton varieties showed complete immunity from *Pemphres* infestation.



An experiment was conducted recently to study the normal intensity, of infestation in *H. esculentus*. Six mature *H. esculentus* plants, each averaging about 50" in height were enclosed in a bell-jar after being cut into pieces of about 10" length. The cage was started on 15-12-35; the first emergence of *Pemphres* was recorded on 19-12-'35. The emergence of adults continued till 25-1-'36 and gave a total of 96 males and 121 females.

The emergence indicates that *H. esculentus* is a host plant for *Pemphres affinis*. I have observed the insect in other places also on the West Coast, infesting the same crop. The factors responsible for the absence of the pest on cotton here have yet to be studied.

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Taliparamba. 17-3-'36. }

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## Gleanings.

**New dust replaces Arsenic.** Search for a non-poisonous insecticide that might be substituted for arsenic and that, at the same time, would give effective control of insect pests of vegetables, has been rewarded by the discovery of *derris*, a tropical plant from which a dust possessing marked insecticidal properties can be produced. Entomologists at the State Experiment Station at Geneva, New York, have tried out this new material against worms on cauliflower and against the Mexican bean-beetle, with a high degree of success.

"Although *derris* is commonly referred to as a new insecticide, it is well to remember that centuries ago natives of Borneo and the Malay States used this plant as a source of poison for fish and for their arrow heads," says a statement from the Experiment Station on this subject. "The fact that it is non-poisonous to man when taken through the mouth has recently given impetus to its development as an insecticide. The dust is made from the ground roots, and it is generally agreed that the chief active ingredient is a substance known as rotenone. A good grade of powdered *derris* root will contain 4 or 5 per cent. of rotenone." In tests carried on by the Station specialists, ground *derris* root diluted with talc so as to give a dust containing 0.5 per cent. of rotenone has given effective control of caterpillars on cauliflower and of the Mexican bean beetle. The method and frequency of application should follow much the same programme as that employed in the use of arsenical dusts. "In general, it will probably be more satisfactory to purchase the material ready mixed unless the grower has good facilities for mixing dusts," concludes the statement from the Experiment Station. "Owing to the fact that *derris* deteriorates rapidly on exposure to air and light, the container might be kept tightly closed between applications. Dusting should be at the rate of 25 or 30 pounds per acre, and the material can be applied with a power duster or with a good rotary hand duster. In gardens or small plantings, the dust may be placed in a cheesecloth sack and sifted over the plants." (*Scient. Amer.*, Vol. 154, No. 4).

**Zinc Sulphate for Citrus trees.** Dr. A. F. Camp, Horticulturist at the Florida Agricultural Experiment Station, Gainesville, Florida, has obtained striking results in the use of zinc sulphate sprays on citrus trees affected with frenching. Frenching is distinguished by a yellowing between the veins of the leaves, with the areas along the veins and the edge of the leaf remaining green. If the trouble is severe, the leaves are very small and the twigs short, giving a bushy appearance to the tree. The twigs die back from the tip and are particularly susceptible to cold damage, even in mild cold spells. In the severest forms of frenching,