

HINTS TO FARMERS

Insect pests of sugarcane. Sugarcane is a crop singularly free from the attacks of any serious pests in S. India. One of the most serious is the white ant, which comes immediately after planting. The use of fresh and undecomposed manure and trashes like planting of setts from the bottom portion of canes, precipitates this trouble. The admixture of crude-oil or tar-oil emulsion in the irrigation water and proper attention to manuring and the selection of setts will remedy this evil.

A few borers, commonly known as the Early shoot—and Top shoot-borers cause some amount of damage during certain years. No direct control measures can be advocated for these. The release of *Trichogramma parasites* which destroy the eggs of the borers has been tried and reported succesful at Nellikuppam. The Mysore Dept. of Agriculture advocates a light earthing up as soon as the setts germinate and again about 3 weeks later.

Occasionally the cane-fly, *Pyrilla* also increases in enormous numbers. The young and adults of this insect have been very successfully controlled by dusting with 5 per cent Gammexane dust.

Insect pests of paddy. *Paddy.* Paddy is subject to the attacks of a large number of insects. One of the most serious and wide spread is the Paddy stem-borer. The caterpillars cut the ear-head stalk almost at the soil level causing 'white ears'. Usually the insects would be present even in the earlier stages when it is easily over-looked. The use of light-traps during the early hours of dark nights, will serve to destroy large numbers of the adult moths and prevent the further spread of the attack.

Another equally serious and wide-spread insect is the Rice-bug which sucks up the grain contents before it hardens. It has been recently found that dusting with Gammexene 5 per cent dust protects the crop till the grains harden.

This year, a paddy insect usually considered as of very little importance, the paddy green jassid, a dark green, wedge-shaped, small active insect developed in great numbers in certain paddy tracts and did considerable damage to the tender crop before anything could be done. It has now been satisfactorily controlled by sprays of 0.1 per cent D. D. T. in water.

The 'paddy mealy-bug' or 'soorai' is another serious insect enemy of paddy, which is becoming extremely wide-spread. Investigations are in progress to evolve satisfactory control measures. In addition, there are innumerable insects attacking paddy, some assuming greater importance in certain areas and others in other places. The use of mechanical methods of control, like netting will serve to check the trouble, if adopted early enough.

Important Diseases of Sugarcane in S. India. *Red rot.* The disease is caused by a fungus (*Colletotrichum falcalam*). The disease is prevalent in all sugarcane growing areas of the Province. It is difficult to detect the disease in the field in the early stages, but the following symptoms manifest themselves when the crop is in an advanced stage. The leaves wither and the stem shrivels and shrinks and the affected plants dry up.

The damage to the crop is depended on the number of clumps affected. One splitting open the cane of an affected plant, the characteristic symptom of the disease are seen viz., red blotches, with a white centre transversely elongated, are noticed in the lower internodes. A sour smell is also characteristic of the disease.

Control measures. The disease is propagated mainly through planting infected setts. Therefore only disease free setts should be used as planting material. As waterlogging in the fields helps the development of disease, adequate drainage facilities, should be provided in all cane fields. Steeping the setts in 1% Bordeaux mixture prior to planting will reduce chances of soil infection.

Smut. The disease is caused by the fungus *Ustilago Scitaminea*. The smut disease of sugarcane is a limiting factor in cane production in many parts of the Province, especially in areas where ratooning is practised. The disease is easily recognised in the field. The production of long whip-like dusty black shoots, is characteristic of this disease.

The disease is chiefly propagated by planting infected setts, and a certain amount of secondary infection also occurs by the spread of infection in the fields through spores produced in the smutted shoots.

Control measures. The prompt removal of the entire infected clump is necessary to prevent secondary infection. Careful selection of setts, from disease free clumps, will greatly reduce chances of primary infection. Steeping the setts in 1% Bordeaux mixture will also help in reducing infection.

Sett rot. Caused by the fungus *Ceratostomella pardoan*.

Setts for planting, sometimes, show a blackening, as a result of invasion of the fungus, and the germination of such setts is affected. Treatment with 1% Bordeaux mixture is effective in controlling sett rot.

Rice diseases. *Stem rot disease of rice—Sclerotium oryzae.* Stem rot disease of rice caused by *Sclerotium oryzae* has been known to occur in all paddy growing areas in the Province, but as a rule the disease affects

only a very few plants in the late stages of the crop and consequently the damage caused by it is not great. The disease was therefore considered to be of minor importance in our Province and no attempts were made to tackle it. During this year, however, the disease assumed serious proportions in some parts of Tanjore District affecting the *Kuruvai* and *Ottadai* crop and causing certain amount of damage.

Symptoms of the disease. The presence of small dark spots on the outer sheaths of the plant at the waterline are first indications. As the disease progresses the submerged portions begin to rot in the affected plants and the culm shrinks and ultimately collapses, causing the plants to fall over and lodge. The tillers arising from the base of infected plants die. In mild cases the disease may not kill the plants, but the earheads formed are only partially filled. The plant is sickly with yellow leaves. If a diseased culm is split longitudinally, the basal portion is found to be infected with the fungus. A web of mycelium is produced in the hollow of the stem, and small black sclerotia* can be seen dotted all over the inner surface. The presence of sclerotia is characteristic of this disease and enables one to distinguish stem rot from other diseases like foot rot, which also affect the base of the stem. The fungus enters the plant through the base of the culm in the region which is under water and invades the tissues of the plant causing rotting of the stem.

How does the disease spread. The sclerotia are the fruiting bodies of the fungus. They are capable of remaining in a dormant stage for a long time, and germinate and infect the plants when conditions are favourable. Normally, when the plants are vigorous the fungus is not capable of doing much damage to the outer sheaths alone being invaded by the fungus, but when the plants are weakened by other causes such as spells of drought, inadequate manuring or lack of aeration, the fungus is able to penetrate the inner tissues and cause stem rot. In Tanjore this year, the conditions which led to the out-break of the disease would appear to be the following. (1) Inadequate water supply in the early stages of the crop, and (2) to some extent the weakening of the plants, caused by jassid infestation.

Control measures. Stem rot disease of rice is difficult to control. In Arkansas in America, control is effected by modification of irrigation methods. As the fungus gains entrance through the leaf sheaths in the submerged region, draining off excess water and allowing just enough water to keep the soil muddy, have been found to be effective in arresting the progress of the disease. But this may not be practicable in places where the supply of water is uncertain and is not recommended unless local conditions permit.

*Sclerotia — small dark coloured bodies of minute size but visible to the naked eye.

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An application of Ammonium sulphate $\frac{1}{2}$ to 1 Cwt. per acre has been found effective in stimulating the production of tillers, and overcoming the effects of the disease, in cases where the intensity of attack is not very great.

As the disease is carried over to the next season, through the stubbles in which the sclerotia are lodged, it is recommended that in all badly infected fields, the stubbles are removed and burnt after the harvest.

Hurried preparation of the land should be avoided and the field should be puddled well, and time must be allowed for the remnants of the previous crop to rot and disintegrate before transplanting is done.



Gleanings.

Plant Identification is an Important Service. The New South Wales National Herbarium has received 240 duplicate specimens of South American plants to add to its collection. Many of them are species not previously represented in the collection. They include a large number of leguminous plants, and ten species of Lantana new to the Herbarium's records. Plant identification is an important service to Australian farmers. It helps to keep a check on the accidental introduction of plants known to be pests, or which may become so under Australian conditions. There is also an increasing interest in new plants, especially pasture grasses or grasses likely to be useful for the control of soil erosion. It is a curious fact that Australian farming rests on the successful cultivation of crops, fruits and grasses imported from other parts of the World. Many imported plants have done much better in Australia than in their original environment, and it is quite likely that among the specimens recently obtained from South America may be some that will eventually find a useful place, not only in the Australian Herbarium, but also among the pastures and cultivated crops of the future. (Agricultural Newsletter No. AGN/225).

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