

We are glad to note that the Premier has abundant faith in the possibilities of scientific research in agriculture which, he urges, the state will have to continue "to an increasing extent for a long time to come" though the onus of financing industrial research will have to be shifted to the shoulders of industrialists as in the West — "when agricultural research will receive a fillip". The application of fruits of agricultural research to practical agriculture in an ever wider measure is a problem that needs more attention meanwhile.



## HINTS TO FARMERS

**Sorghum smut.** Sorghum is one of the staple food-crops of our Province. This crop is very often affected by a disease called smut. It is prevalent in all districts especially in the crops raised in the colder months. Dirty grey bodies about half to three fourths of an inch in length develop in the place of grains on the affected plants. All the grains in a head may be thus transformed or a portion of the head may be involved. When crushed between the fingers, these bodies are found to be filled with a black powder, the spores of the fungus which causes the disease. The economic effect of the disease is in the reduction of the yield of grains.

The disease is seed borne. Since the spores of the smut fungus are attached to the seeds, the disease can be completely controlled by disinfecting the seed with finely powdered sulphur before sowing. The seeds are thoroughly mixed with sulphur using one ounce of the powder for every 15 pounds of seed. When the quantity of seed is small, the sulphur powder and the seed are placed in a closed tin or earthen vessel

and thoroughly shaken for 15 minutes. But when larger quantities are involved special seed-dressing drums are used. By this simple treatment the seeds get a coating of sulphur. When such treated seeds are sown, the infection of seedlings is prevented and the crop will be free from disease.

Though sulphur is not readily available in the market, the Agricultural Department has taken pains to stock and supply needs of cholam growers. Sulphur can be had from the nearest Agricultural Demonstrator in packets of 4 ounces each, sufficient for treating 50 pounds of seed.

**Control of "damping off" in tobacco nurseries.** The most serious disease commonly met with in tobacco nurseries is "damping off" of seedlings. This disease is found to take such a heavy toll that the area under nurseries every year is usually twice the required area so that the loss works out to about 50 per cent of the crop of seedlings produced.

Before 1924, it was usual to raise these nurseries in black soil areas adjacent to the fields prepared for transplanting purposes. As the destructive nature of the disease was found to be very severe in these heavy soils, it was thought that the sandy areas might be more suitable for raising the tobacco nurseries. In 1924 the I. L. T. D. Co. raised 10 acres of nurseries in the sandy area at Chirala. Since then the area has increased considerably and now the major portion of the nurseries is found only in the sandy soils. Though the sandy areas have found to be ideal for tobacco nurseries it has not been possible to check the ravages of "damping off". Even here the toll due to the disease was quite heavy when favourable conditions for the disease prevailed.

The disease is caused by a fungus which is a natural inhabitant of the soil. This organism causes the tissues of the lower portions of the stem to collapse near the ground level with the result that affected seedlings topple over, lie flat on the soil. Then the leaves and stems begin to decay rapidly.

**Control.** When conditions are favourable for the outbreak, the disease appears all of a sudden and spreads very rapidly sometimes damaging entire seed-beds overnight. Hence curative measures after the appearance of the disease are useless. The following preventive measures have been found quite successful in controlling the disease both in the sandy as well as black soil areas :—

- (1) On the 20th day after sowing, the seed-beds should be sprayed with 1 per cent Bordeaux Mixture, at the rate of 500 gallons per acre.
- (2) Two more sprayings should then be given at intervals of a fortnight.

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