

In their study of the Fusarium wilt in sann hemp, the results of which will be published separately, the present writers had obtained evidence that *Fusarium vasinfectum* was a highly specialised species and in no case did the form on sann hemp pass to pigeon pea, and *vice versa*. These results were contrary to those reported by Mitra, and it was therefore decided to test the correctness of Mitra's conclusions by a series of well-designed experiments. Cultures of *Fusarium vasinfectum* from sann hemp and pigeon pea grown in Pusa and in its neighbourhood were secured through the kindness of Dr. Mitra, and were compared with similar cultures obtained locally. The seeds of a wilt-resistant type, T. 80, and of a susceptible type, T. 5, of pigeon pea were also secured from Pusa.

Cross inoculation experiments were made in soil temperature tanks of Wisconsin type at 28° C., the optimum temperature for the development of wilt. In all cases seeds of sann hemp and pigeon pea were surface-disinfected before sowing in pots. In these experiments cultures of *Fusarium vasinfectum* from sann hemp did not infect pigeon pea and *vice versa*, although control plants in all cases gave a high percentage of deaths.

These results will be reported in detail separately.

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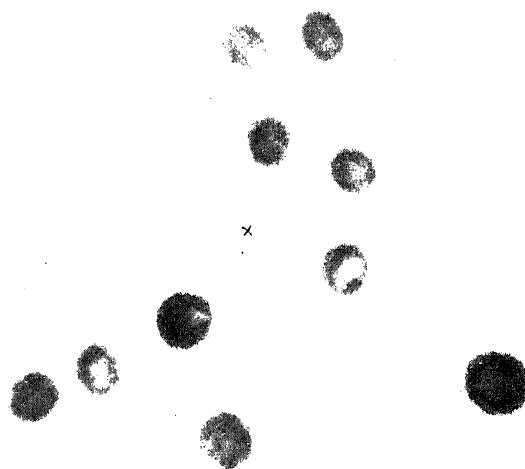
¹ Mitra, M., *Ind. Jour. Agric. Sci.*, 1934, 4, 701-714.

Dummy Pollen.

IN the course of the examination of innumerable pollen grains in many varieties of *Sorghum* since 1931, a peculiar kind of pollen was met with. An examination of pollen grains under the microscope shows constantly a few grains devoid of solid contents (see Figure). In size they are comparatively small (31 μ to 34 μ). Due to the pressure of the sap inside, they are not shrivelled but retain normal shape. They do not germinate and usually plasmolyse in the culture medium. Pollen studies have not, so far as we are aware, recorded non-germinating pollen of this peculiar type. Similar pollen has been met with in the allied wild grasses, *Andropogon annulatus* and *Andropogon pertusus*, L. In the eight different

varieties of *Sorghum* examined, the incidence of this pollen ranged from 2.3 to 13.5 per cent. In the day flowering *S. margaritifera* it was only 0.4 per cent. The higher types of cultivated *Sorghum* had a lower percentage of this Dummy Pollen. Dummy Pollen is slightly less in the anthers at the base of the earhead.

In the other millets this pollen is met with in *Pennisetum typhoides*, Stapf and Hubbard (also a millet of African origin), which like



× Dummy pollen in *Sorghum*. × 150.

Sorghum has both hermaphrodite and antheriferous flowers. Instances have been met with in both *Sorghum* and *Pennisetum* in which a non-dehiscence of anthers proved to be due to an extreme paucity of this Dummy Pollen, it being under one per cent. in the non-dehiscenced ones, and over seven per cent. in the dehiscenced ones. This points to the probable rôle of this Dummy Pollen as a specialisation ensuring dehiscence in these predominantly night-flowering millets. An experience has been met with in which this poverty of Dummy Pollen and the attendant non-dehiscence of anthers proved a simple recessive to the presence of the normal proportion of such pollen and the consequent dehiscence of anthers. A fuller account of this experience is being published elsewhere shortly.

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