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ON THE EFFECT OF PHORATE ON GERMINATION OF COWPEA SEEDS AND PHYTOTOXICITY TO THE SEEDLINGS

While studying the effect of phorate granules applied with cowpea seeds on the dissipation of the insecticide within the plants it was observed that the insecticide treatment effected germination of seeds and caused phytotoxicity to the seedlings. Eighty pots each with 20 kg of soil and seeded with one cowpea seed under each of the treatments 0,1,2 and 3 kg ai of phorate per hectare were observed for the effect on germination. It was found that there was 100% germination of seeds in pots receiving no phorate treatment. Seeds sown in pots with 1,2 and 3 kg ai of phorate per hectare showed 85, 75 and 47.5 per cent germination respectively. Similar adverse effect of phorate on germination of seeds have been reported earlier in cotton by workers like Fadiger and Suplicy (1960) and Tsai and You (1961).

Phytotoxic symptoms were seen on the cotyledons of the seedlings. The toxicity appeared first as minute reddish specks which gradually enlarged to form white circular spots with dark brown margins. The spots measured 0 to 3 mm in diameter. The spots along the margins of the cotyledons coalesced together extending along the entire margin. The spots ultimately got punctured especially along the margins. These necrotic fleckings were mote severe in the seedlings receiving the higher doses of the insecticide. The fresh leaves appearing in the piants were however free from this symptom. In severe cases of phytotoxicity the seedlings appeared stunted in the beginning, but they recovered fully subsequently. Similar phytotoxic symptoms were recorded in other vegetables by Wolfenbarger *et al.* (1965) and Hacskaylo (1957). The appearance of phytotoxicity on the cotyledons alone, could be attributed as stated by Reynolds *ct al.* (1957) to the accumulation of the insecticide in the cotyledons and due to the slow translocation of the insecticide from the cotyledon to the other plant parts.

സംഗ്രഹം

ഫോറേറ്റ് 10 തരി പയറുവിത്തുകളോടൊപ്പം മണ്ണിൽ പ്രയോഗിച്ചാൽ വിത്തുമുളയ്ക്കലിനെ പ്രതികൂലമായി ബാധിക്കുന്നതായും CT6>rtnc£b<s6>ss തൈകളിൽ വിഷാക്തതമൂലം പുള്ളി ക്കുത്തുകൾ ഉണ്ടാകുന്നതായും കാണപ്പെട്ടു.

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