rate was slower. Doses higher than 10 kR resulted also in retarded seedling growth (Fig. 2). Seedling growth was not depressed by 10 kR dose.

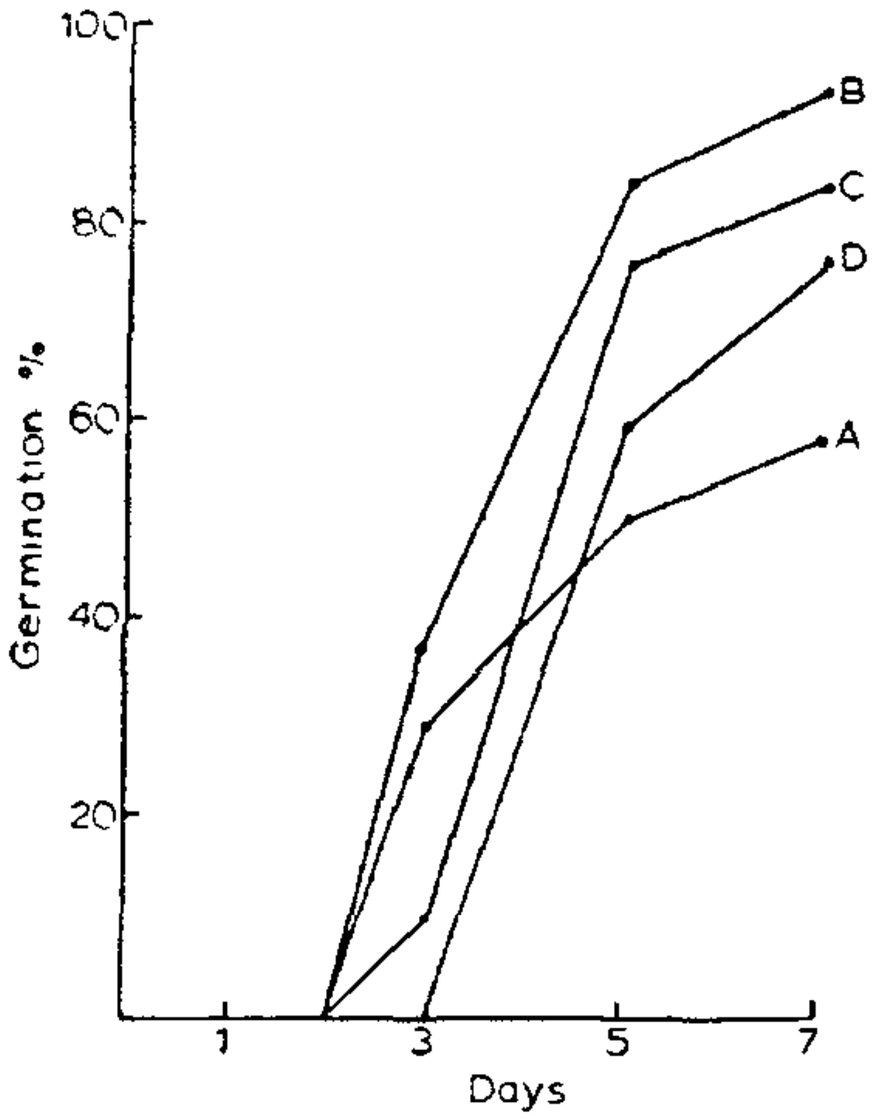

FIG. 1. Germination percentage of gamma-irradiated dormant *Avena fatua* seeds. A ; control, B : 10 kR, C : 20 kR, D : 30 kR.

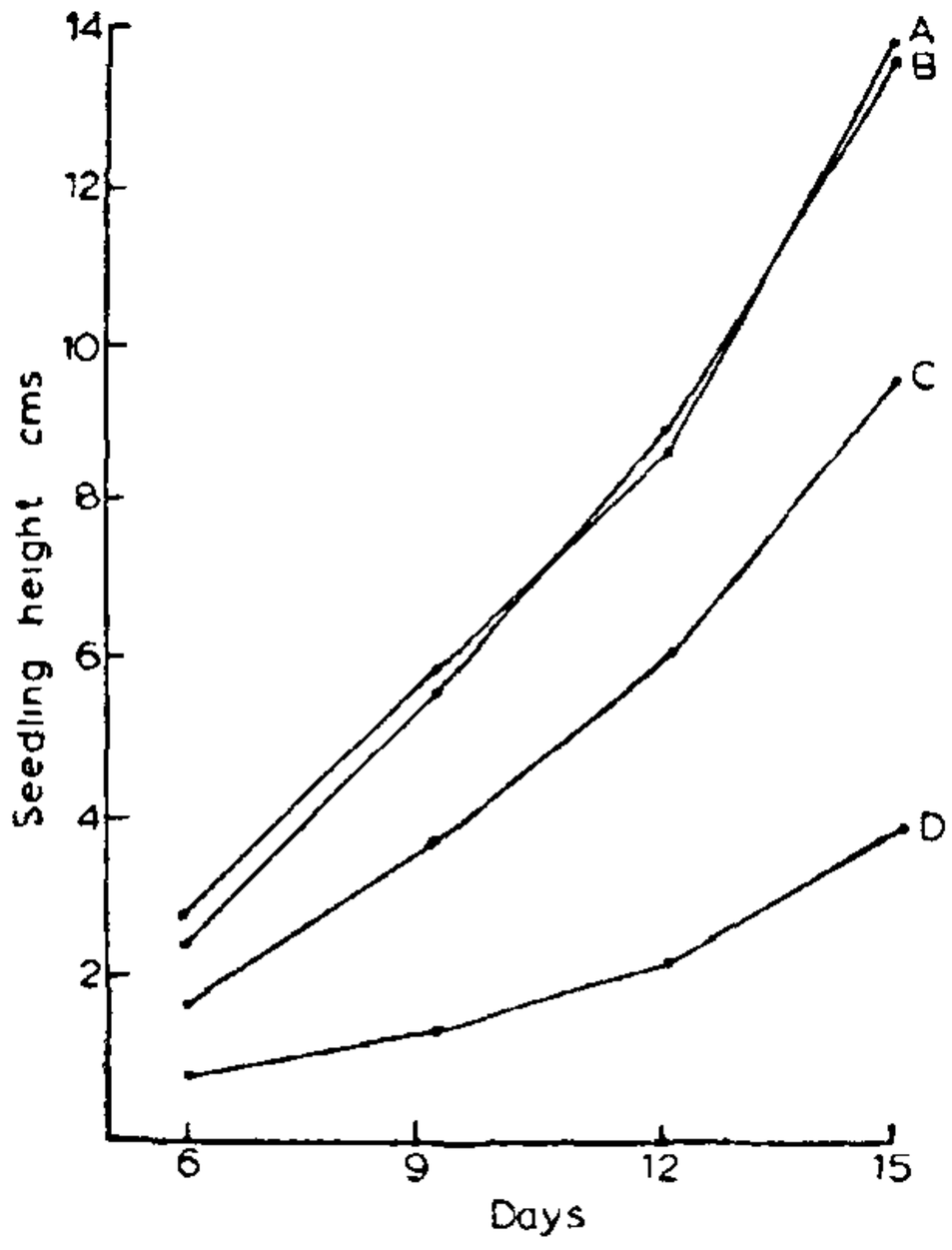

FIG. 2. Seedling height of *Avena fatua* seedlings raised from seeds exposed to gamma radiation. A : control, B : 10 kR, C : 20 kR, D : 30 kR.

Considering the evidence that gamma radiations cause the production of H_2O_2 in the tissues[6] and increased oxygen uptake and respiration[7,8] along with the fact that treating the seeds with H_2O_2[4] and placing the seeds in high oxygen concentration[1] promote germination of dormant seeds, it seems quite likely that gamma radiations promote germination of dormant *A. fatua* seeds by increasing their oxygen uptake and causing formation of peroxy radicals in the tissues, which in turn may inactivate the inhibitors by oxidation and thus tilting the promoter/inhibitor balance in favour of the promoters. It was suggested by Sax[9] that ionizing radiations may stimulate plant growth by altering the auxin balance in the organism, but only a few studies[10,11] have been conducted on the effects of ionizing radiations on different plant growth regulators. Gamma-irradiated dormant *A. fatua* seeds thus provide an excellent system in which the mechanism of stimulation of plant growth by radiation can be studied.

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BLOSSOM END ROT OF BOTTLEGOURD (*LAGENARIA SICERARIA*) (MOLINA) STANDL. INCITED BY *PYTHIUM BUTLERI* SUBR.

A VERY high incidence of blossom end rot on bottlegourd fruits was noticed at Hessaraghatta farm in trials against powdery mildew with systemic fungicides, during January–February, 1975. Fruits of all ages showed the attack though the incidence was more on young developing ones.

Infection started from blossom end as small water soaked lesions which gradually turned darkish and progressed towards stem end covering the

entire tip region. Under humid conditions the diseased tissues were covered by a whitish, fluffy, mycelial growth. In certain cases the entire fruit was profusely covered. The flesh turned brownish and became corky.

FIG. 1. Typical field symptoms of blossom end rot on bottlegourd fruits.

Pythium butleri Subr. was isolated from the infected fruits in pure culture and produced typical disease symptoms on artificial inoculation within 36 hours. Fruits of watermelon, muskmelon, pumpkin, cucumber, coccinia, roundmelon and squash (patty pan) were inoculated. All were found susceptible. The fungus is known to attack various hosts[1-6], but so far it has not been reported to cause fruit rot of cucurbits. The fungus has been deposited under I.M.I. No. 167978.

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FUNGI IN THE ROOT REGION OF *PARTHENIUM HYSTEROPHORUS* LINN.

Parthenium hysterophorus L., an allergic weed, belonging to the family Compositae has been reported to contain inhibitors in all parts of the weed[1]. Further, it is well-known that the seat of synthesis and the storage of alkaloids are the young root tip and the root bark, respectively. It seemed, therefore, probable that these alkaloids might have a significant influence on the microbial population on and around the roots. Hence the rhizosphere and rhizoplane mycoflora of *P. hysterophorus* were examined.

Plants were collected at the pre- and post-flowering stages at random around the Central College Campus, Bangalore. Roots, with the rhizosphere soil still attached were carefully removed. The control soil was collected 10–12 cm away from the root. Samples were stored in polythene bags and processed in the laboratory. The soil from the roots was removed by tapping in measured quantity of sterile water. Dilutions were made from the suspension. Waksman's dilution plate technique was followed for the isolation of the fungi[2,3]. One ml. of 1 : 10,000 dilution was plated on martin rose-bengal agar using streptomycin as antibacterial agent[4]. For the rhizoplane mycoflora, the roots cleared of the rhizosphere soil were cut into 1·0 cm pieces and plated on the same medium.

Results

A general suppression of fungal species in the pre-flowering and the post-flowering rhizosphere soil is noticed (Table I). It seems probable that the presence of alkaloids in the root region is correlated with the suppression of fungi[5]. The increase in the fungal population in the rhizosphere soil of post-flowering plant could be explained as due to a change in the composition of root exudates or it may be due to more root leakage at the time of the maximum vegetative growth, and least in the post-flowering stage[6]. Further, Tables I and II show that there is complete suppression of *Penicillium* species both in the rhizosphere (pre- and post-flowering) and on the rhizoplane of *P. hysterophorus*,