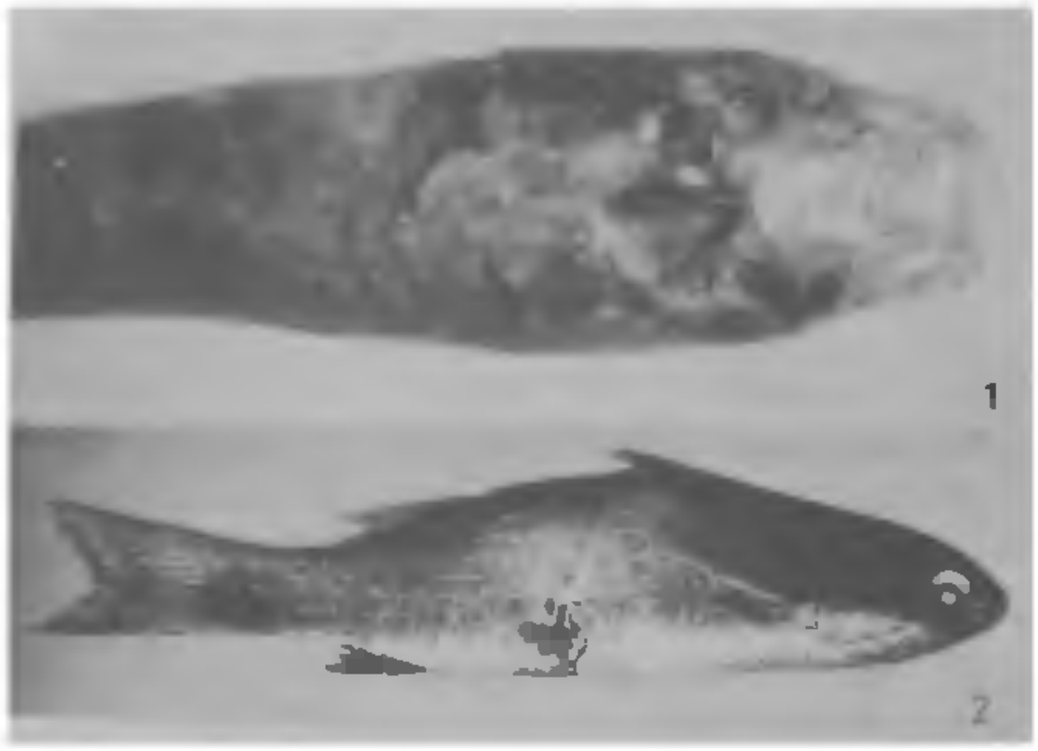

Figures 1 and 2. Lesion of *M. cephalus* injected conus toxin **1.** on the head; **2.** on the lateral sides.

muscles. The spots are called ecchymoses[5]. These colour changes were observed in fish exposed to higher concentrations of venom. Information on the colour changes in fish due to the influence of venomous substance is unknown. Further work in this line is being carried out. Lesions on the head and the sides of the fish were also seen (figures 1 and 2). In crabs, the movements of chelate and swimming legs were restricted and finally the activity stopped before death. No such colour changes were observed in crabs. Investigations are in progress to determine the pharmacological aspects of venom of Conus. Cone toxin may prove useful in both ecological studies and in pharmacology.

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EFFECT OF MAGNETIC FIELDS ON THE SEX EXPRESSION AND YIELD IN THE *CUCUMIS PUBESCENS* WILLD

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CUCURBITS show a wide range of sex forms and great sexual diversity in the ratio of male and female flowers. Sex expression and sex ratio in flowering plants may be affected by a number of agencies such as mineral nutrition, temperature, light, hormones, chemical vernalization and radiation. Quantitative difference in sex expression and sexual diversity was considered to be hereditary[1] or environmental[2] or both[3]. In the present study magnetic field treatment was found to cause a shift in the sex ratio leading to enhancement in yield.

Dry seeds of *Cucumis pubescens* Willd were put in small paper covers and placed between the pole pieces of an electromagnetic equipment at the Palaeomagnetic Lab., of NGRI, Hyderabad. The seeds were exposed to magnetic fields of 1000, 2000, 3000 and 5000 gauss respectively for 2 hr each. Care was taken to maintain the uniform magnetic fields between the two poles of electromagnet during each magnetization process.

As is clear from table 1, magnetically-treated seeds showed improvement in the vegetative growth, sex ratio and yield depending on the dose. The vine length and number of lateral branches increased up to 3000 gauss but at 5000 gauss it showed a decline. Flowering was delayed in the treated material. At 3000 gauss an increase in the number of male and female flowers was noticed. The number of fruits per plant in all the treatments was lower than that of control, but among the treatments 3000 gauss recorded the highest number of fruits per plant. The size of the fruit increased at 3000 gauss and as a result maximum yield was observed at this dose, over the control.

From the results it is clear that magnetically-treated plants grew faster than the control and they were robust[4]. This was attributed to the enhanced uptake of certain mineral nutrients and higher nitrogen uptake[4–6]. Probably the magnetic fields might have accelerated the pace of nitrogen metabolism. The present increase in vigour of the treated material seems to fall in line with the observations of the above workers. The change in the number of

Table 1 *Effect of magnetic fields on Cucumis pubescens Willd*

Character	Control	1,000 g	2,000 g	3,000 g	5,000 g
Length of vine (cm)	97.00 ± 1.28	102.90 ± 1.29**	137.80 ± 2.17**	147.20 ± 0.96**	135.06 ± 0.92**
No. of lateral branches	6.40 ± 0.49	8.20 ± 0.65*	7.93 ± 0.40*	8.85 ± 0.84*	8.46 ± 0.69*
Days to produce first male flower	33.00 ± 2.00	58.00 ± 3.50**	55.00 ± 3.00**	51.60 ± 4.00**	58.00 ± 2.00**
Days to produce first female flower	39.00 ± 2.00	65.00 ± 2.50**	63.00 ± 3.50**	62.00 ± 3.00**	65.00 ± 2.00**
Total no. of male flowers	549	350	365	423	398
Total no. of female flowers	9	4	6	10	6
Sex ratio	61 : 1	87.5 : 1	60.83 : 1	42.30 : 1	66.33 : 1
No. of fruits/plant	9.41 ± 0.55	5.35 ± 1.33**	4.56 ± 0.93**	7.80 ± 1.17	5.12 ± 0.95**
Length of fruit (cm)	9.08 ± 0.25	10.35 ± 0.18**	10.58 ± 0.27**	14.11 ± 1.25**	14.80 ± 0.87**
Diameter of the fruit (cm)	13.72 ± 0.41	14.80 ± 0.17*	15.41 ± 0.31**	17.90 ± 1.25**	14.80 ± 0.87*
Yield/plant (g)	587	525	590	830	500
Pollen fertility (%)	95	83	80	78	75
Total yield (kg)	7.215	7.167	8.278	12.556	6.256

t test–*Significant at 5% level; **Significant at 1% level;

female flowers due to magnetization of cucumber sprouts was also observed by Abroskin *et al*[7]. Krylov and Tarakanova[8] proposed an auxin-like effect to the influence of magnetic fields. Kolin[9] suggested that magnetic fields act at molecular level.

The possible mechanisms of biological effect of magnetic fields have been discussed earlier[10]. The work of Dunlop and Schmidt[11] on *Pithophora* and *Allium cepa* indicates that the magnetic fields can also alter the normal course of development. Probably these changes might have brought an increased uptake of nutrients as a result of the increased size of the fruit, ultimately resulting in higher yield.

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PLATE ASSAY TO SCREEN FUNGI FOR PROTEOLYTIC ACTIVITY

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PROTEOLYTIC enzyme finds wide application in various industries and pharmaceutical preparations[1]. Although proteolytic enzymes can be obtained from animals and higher plants, it is the microorganisms that are preferred in industrial application of enzymes due to the technical and economic advantage. Most of the proteases, currently used in various industries, are of microbial origin. Many fungal proteinases have been proved to be valuable reagents in the laboratory and in industrial processes[2]. In view of the commercial application of fungal proteases, there is a need