Table 1 *Effect of MIC on reproduction in rats*

Description of groups of animals	Receptiveness in female rats	Virility in male rats	Fertility	Total number of pups born	Litter size (numbers)	Body weight of pups (10–12 h old) (g)
Control		+	+			
male ($n = 2$)	+		+	39	6.50 ± 0.76	6 01 ± 0 36
female ($n = 6$) (1:3)"						
Treated males ($n = 6$) mated with		+	+			
untreated females ($n = 6$) (1:1)"	+		+	46	7.66 ± 0.49 NS	5.12 ± 0.33 NS
Treated females ($n = 6$) mated with	+		+	41	5 85 ± 0.72	6 53 ± 0.74
untreated males ($n = 2$) (1:3)"		+	+		NS	NS

Values are mean ± SE; NS = not significant, compared with control group; " Mating ratio = male:female; The periodicity of oestrus cycle (6 cycles) was normal in all cases. The gestation period was 21–23 days and the neonatal survival was 100%.

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ACTINASTRUM HANTZSCHII LAGERHEIM VAR. *INTERMEDIUM* TEILING FROM INDIA

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SINCE the establishment of *Actinastrum hantzschii* Lagerheim var. *intermedium* Teiling by Brunnthaler from Sweden, it has been reported by Salim from polluted pools of Lahore in West Pakistan[1]. The present alga was collected from a polluted pond in Bakrol near Vallabh Vidyanagar in Gujarat during December 1986. This is the first report of its occurrence in India.

The present planktonic form was found growing along with species of the genera like *Raphidiopsis*, *Oscillatoria*, *Microcystis*, *Anabaenopsis*, *Merismopedia* and *Scenedesmus*. The temperature of the pond varied from 15 to 23°C. The pH ranged from 7.8 to 9.2.

Actinastrum hantzschii Lagerheim var. *intermedium* Teiling (figure 1)

The present alga is colonial, usually with 4 to 8 cells radiating from a common centre. Cells broadly spindle-shaped with a tapering hyaline tip. Colonies 21–51 μm in diameter. Cells 12–25 μm long and 1.6–3.8 μm in breadth. Chloroplast parietal with a small pyrenoid.

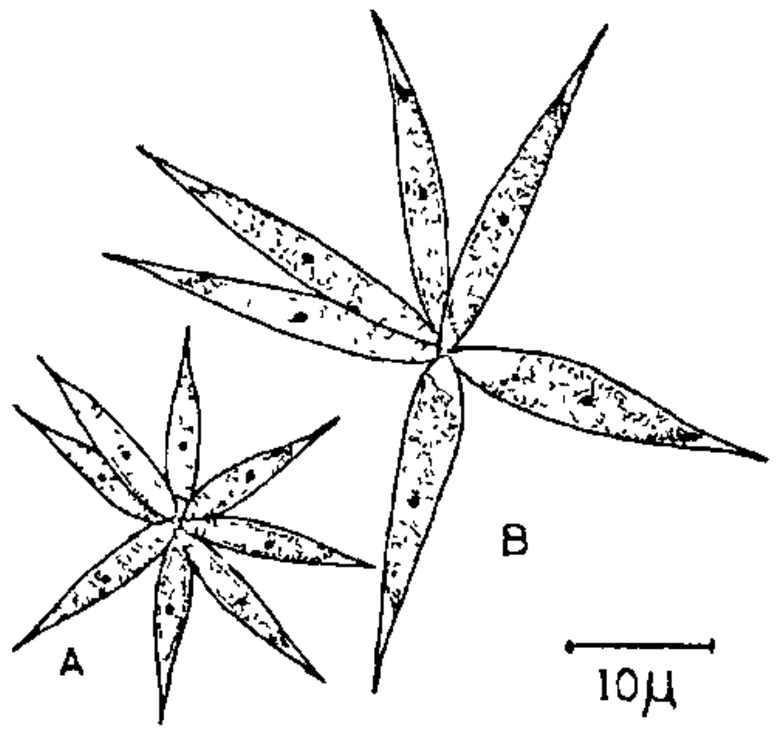

Figure 1A, B. Eight and six celled colonies of *Actinastrum hantzschii* Lagerheim var. *intermedium* Teiling.

The present specimens are similar to those from Pakistan in all characters except in having greater length and lesser breadth, the latter measuring 14–16.5 × 4.5 μm.

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INVERSE RELATIONSHIP BETWEEN ENDOGENOUS PHENOLS AND ALPHA AMYLASE ACTIVITY DURING CHILLING OF *ROSA MACROPHYLLA* LINDL. SEEDS

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SEEDS of a number of plant species require exposure to low temperature of variable periods before germination[1]. Best known examples of such cases are found among the members of Rosaceae and Conifers. It is logical to assume that during exposure to low temperature, some biochemical changes occur in seeds enabling them to respond positively to favourable conditions of germination. However, a direct relationship between these changes and the termination of dormancy need not always exist[2].

In the seeds of *Rosa* spp. although the mechanical resistance offered by the seed coat contributes to dormancy, the role of inhibitors has been shown to be more important[3]. Abscisic acid is present in achenes and flesh of *Rosa* spp. in relatively high concentrations[4], the levels of which have been demonstrated to be lowered during breaking of dormancy, phenolic compounds, categorized as growth-inhibitors[5], have also been implicated in seed dormancy[6]. In the present investigation, the overcoming of seed dormancy in *Rosa macrophylla* by chilling is reported. This is accompanied by changes in the phenolic content of seeds. Since α-amylase plays an important hydrolytic role during germination and is responsible for the availability of mobilizable carbohydrates through starch degradation, we have also monitored the changes in its activity.

Seeds of *R. macrophylla* Lindl. were collected from Narkanda and adjacent areas (W. Himalayas, altitude ca 2600 m) during September and October, which, at the time of harvest exhibited total dormancy. Seeds were selected for uniformity of size and surface-sterilized with 0.1% $HgCl_2$. The seeds were then imbibed for 24 h in distilled water and kept on a wet substratum at 5 ± 1°C in a freezer for 45 days. At definite intervals during the chill treatment, the seeds were checked for percentage germination[7], phenol content[8] and α-amylase activity[9].

Chill treatment to dormant *R. macrophylla* seeds helped them recover from dormancy. After incubation at low temperature for 7 days the seeds exhibited ca 10% germination which improved gradually in proportion to the length of the low temperature treatment leading to more than 50% germination after 45 days of chilling (figure 1). Changes in the total phenolic level in seeds monitored during breaking of dormancy revealed that the chill-induced alleviation of seed dormancy in *R. macrophylla* is paralleled by a gradual decline in the total phenolic content of the seeds. During the first week of exposure to low temperature, seeds lost 50% of their initial phenol content which was further lowered to 13% of the control levels after 45 days treatment (figure 1). Further, the removal of seed dormancy by chilling was accompanied by a simultaneous rise in α-amylase activity (figure 1). A 2.5 fold increase in α-amylase activity over that of the controls was observed in seeds chilled for 7 days. α-amylase activity was further stimulated (3.3 fold) after 45 days of low temperature treatment.

That low temperature is effective in removal of dormancy in many plant species is well known. In *Rosa* spp. low temperature treatment results in germination of dormant seeds. Barton and Crocker[10] showed that *Rosa multiflora* necessarily