

TABLE II
Physico-chemical properties of Bhatta pond on 1-10-1974

Depth (m) Factors	0.0	0.5	1.0	1.5	2.0
Temperature (°C)	30.2	30.2	29.6	29.6	29.3
Dissolved O ₂ (mg/l)	10.3	9.0	7.5	4.2	3.2
Free CO ₂ (mg/l)	Nil	Nil	Nil	Nil	Nil
pH	8.2	8.0	7.8	7.8	7.5
Carbonate Alkalinity (mg/l)	7.4	2.1	1.3	1.1	1.1
Bicarbonate Alkalinity (mg/l)	108.0	112.0	128.0	135.0	134.0
Total Hardness (mg/l)	112.0	120.0	120.0	122.0	126.0

On that day a very thick bloom of phytoplankton was visible and distributed even upto one meter. The Secchi disc visibility was 89.0 cm. Bright sunshine was noted for 9 hours on the day. The phytoplankton population was comprised mainly of blue-green algae, which are known to be good photosynthesizers (Nasar⁹). Data on certain physico-chemical properties of the pond water¹ on 1.10.1974, are given in Table II.

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Association of *Enterobacter* with Coconut Root (Wilt) Disease

The coconut root (wilt) disease causes an estimated annual loss of about 300 million rupees and has been the subject of multidisciplinary investigations. The symptoms of the disease are a defective root system and flaccidity of leaves and leaflets. Yellowing of leaves and marginal necrosis of leaflets appear during the advanced stages of the disease.

From the growing tips of coconut roots an off white bacterium forming translucent, smooth, flat and glistening colonies with entire margin was isolated. For isolations, freshly collected and surface sterilized coconut roots from both the root (wilt) affected and healthy regions were plated on an enriched medium containing 15% coconut root extract solidified with agar. The bacterium was conspicuous by its absence in coconut roots collected from the healthy regions.

The bacterium was rod shaped, Gram negative and motile and the cultural characteristics were: utilised glucose fermentatively, catalase positive, MR negative, V.P. positive, H₂S produced, indole negative, gelatin liquefied and starch not hydrolysed. Produced acid and gas from sucrose, sorbitol,

mannitol, arabinose and salicin besides glucose. Arginine decarboxylase and nitrate reductase were present while lysine decarboxylase, phenyl alanine deaminase and urease were absent. The bacterium has been classified as a species of *Enterobacter* resembling *Enterobacter cloacae*.

The coconut *Enterobacter* isolates produced alcohol precipitable polysaccharide like materials in growing culture filtrates when cultivated as still culture in nutrient broth. An aqueous extract of the polysaccharide like material reversibly wilted tomato seedlings *in vitro*. Species of *Aerobacter* (*Enterobacter*) have been implicated in plant diseases¹. Studies are in progress to elucidate the exact role of the bacterium in the coconut root (wilt) disease.

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Resistant Barley Varieties for the Control of *Heterodera avenae* Wollenweber, 1924

Heterodera avenae, the cereal cyst nematode has a limited favourite host range, e.g., wheat, barley and oat. The disease caused by this nematode is known as 'Molya'. Its distribution⁴ in India has been reported from four states including Haryana. According to a report¹, Telone treatment produced a gain in wheat yield (var. Kalyan) to the extent of 128%.

Resistance in barley to *H. avenae* has been reported from abroad³⁻⁵. Resistant sources were not reported² possibly from India. As far as known to the authors, this would be the first report of the kind from this country.

Based upon pot-screening of 75 barley varieties in 1974-75 and testing in 1975-76, a few barley varieties showing resistant reactions in preliminary screening, BP 263, C 164 and B 264 were identified to be highly resistant to *H. avenae*. It was found that ratios of females to males of this nematode in these varieties were 1 : 106, 1 : 119 and 1 : 86 respectively. Thus, formation of enormously larger number of males than females provided a very useful characteristic for heavy reduction in nematode population. A field trial

with these varieties has shown that growing of a resistant barley crop in one season in an infested field would check the formation of cysts, and, therefore, almost a normal crop of wheat can be obtained from the same field in the next season. Adoption of this practice is quite effective and simple.

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Foot Rot of 'Suran' (*Amorphophallus companulatus*),— A New Disease

A severe foot rot of *Amorphophallus companulatus* (Roxb.) Biume ex Dore., was observed (July-September) for the last two years. Isolations revealed the presence of *Fusarium moniliforme* Sheld., from the infected plants.

The disease manifests itself when the plants are about two months old. The rot starts as a water soaked lesion at the collar region. Affected plants show slight pale colour on the tips of young leaves, which gradually spread downwards to the leaf blade and leaf sheath. Ultimately the entire plant turns yellow and collapses due to the rotting of the basal portion. Thiram and Benlate were found effective at 500 ppm. while Captan, Difolatan and Plantvax were in-effective.

Stalk rots due to *Fusarium moniliforme* have been earlier reported on maize by Maric *et al.*¹. The disease is the first record of *F. moniliforme* causing foot rot of *Amorphophallus companulatus*.

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