Inc. Texas) using triple distilled water[3]. The angle made by a drop was observed for 25 min to note the changes. The contact angle was measured on the gelatine modified surface for a period extending to 9 weeks, to study the leaching phenomenon.

*Platelet adhesion*:

Washed platelets were prepared from citrated calf blood as described elsewhere[1] and suspended in tyrode solution[4]. The surfaces were exposed to the platelet suspension for 15 min and then rinsed with buffer under controlled flow rate for 2 min. The platelets were fixed with 2.5% glutaraldehyde and stained with Coomassie Blue. The platelet density was estimated using an optical microscope.

The migration of leachables to the surface of the PVC makes the initial contact angle high (*i.e.* hydrophobicity). The angle made by the water drop changes as the water penetrates the leachables.

As seen from table 1, the contact angle on the bare PVC changed from the initial value of 90° to 68° in 25 minutes. On the gelatinated surface also the angle changes due to the hydrophilic nature of gelatine. But the initial contact angle even after 9 weeks time is low compared to that of the bare PVC indicating that the gelatine network prevents the leachables from coming to the surface. The slight increase in the initial contact angle, with time may be due to some conformational changes of the gelatine molecules. The platelet adhesion results in table 2 demonstrate that the gelatine modification has considerably reduced the number of adhering platelets compared to that on the bare PVC. The immobilized trypsin further reduced the platelet adherence (surface B in table 2). Hence such immobilization of enzymes on proteinated substrates may find application in developing blood compatible surfaces.

**Table 1** *Sessile drop water contact angle*

| Time (min) | Contact angle in degrees ± S.D[a] | | | |
|---|---|---|---|---|
| | Bare PVC | Surface A at different intervals | | |
| | | 0 | 6 weeks | 9 weeks |
| 0 | 90.0 ± 1.0 | 50.5 ± 4.0 | 57.0 ± 2.0 | 63.0 ± 2.0 |
| 10 | 76.0 ± 0.5 | 26.0 ± 2.0 | 52.0 ± 3.0 | 57.0 ± 2.0 |
| 20 | 71.5 ± 0.5 | 21.0 ± 1.0 | 49.0 ± 3.0 | – |
| 25 | 68.0 ± 0.5 | 20.0 ± 1.0 | 47.0 ± 3.0 | 47.0 ± 1.0 |

[a] Mean ± Standard Deviation

**Table 2** *Platelet adhesion*

| Surface | No. of platelets/mm² ± S.D[a] |
|---|---|
| Bare PVC | 16.0 ± 2.0 |
| A | 10.0 ± 1.7 |
| B | 7.5 ± 1.7 |

[a] Mean ± Standard Deviation

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## COMPARATIVE PHOSPHATE SOLUBILIZING CAPACITY OF SOME SOIL FUNGI

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THE phosphate-solubilizing ability of different microorganisms has already been studied[1-5]. This character, in respect of fifteen fungi, isolated from the lateritic forest soils of Maharashtra, was studied using Pikovskaya medium with tricalcium phosphate as the substrate. The fungi were inoculated to 50 ml aliquots of this medium, dispensed in 250 ml Erlenmeyer flasks in triplicate and medium without fungus served as control in each case. The flasks were agitated continuously on a rotary shaker for seven days at room temperature (27 ± 2°C). Soluble phosphate in the medium was estimated by the 'molybdenum blue' method[6]. Pigments, whenever produced, were eliminated by adding activated charcoal followed by filtering. Colorimetric measurements were made on Beckman spectrophotometer (model 24) at 680 $\mu$ for standard as well as experimental phosphate concentrations (table 1).

Phosphate solubilized by the fungi was in the range of 1.6–20.9%. *Cylindrocarpon obtusisporum* and

**Table 1** *Solubilization of tricalcium phosphate by soil fungi.*

| Fungus | Total ($PO_4$) Solubilized mg/ml Culture | Control | % ($PO_4$) Solubilized | Final pH |
|---|---|---|---|---|
| *Cylindrocarpon obtusisporum* | 0.84 | 0.2 | 20.9 | 6.0 |
| *Spegazzinia tessarthra* | 0.78 | 0 14 | 20.9 | 5.4 |
| *Beltraniella humicola* | 0.90 | 0.32 | 19.0 | 6.0 |
| *Scopulariopsis brumptii* | 0.62 | 0 14 | 15.7 | 5.4 |
| *Phoma exigua* | 0.56 | 0.13 | 14.0 | 5.1 |
| *Eladia saccula* | 0.60 | 0.21 | 12.7 | 5 6 |
| *Curvularia lunata* | 0.56 | 0 19 | 12.1 | 5.5 |
| *Myrothecium roridum* | 0.51 | 0 14 | 12.1 | 5.5 |
| *Humicola fuscoatra* | 0.46 | 0.10 | 11.8 | 4.7 |
| *Robillarda sessilis* | *0.50* | *0.14* | *11 8* | *5.0* |
| *Gliomastix murorum* | 0.51 | 0.18 | 10.8 | 5.0 |
| *Syncephalastrum racemosum* | 0.44 | 0 14 | 9.8 | 5.7 |
| *Periconia cambrensis* | 0.31 | 0.21 | 3.2 | 4.3 |
| *Cladosporium sphaerospermum* | 0.21 | 0.16 | 1.6 | 3.5 |
| *Scolecobasidium variable* | 0.25 | 0.27 | — | 5.9 |

Initial ($PO_4$) added = 3.05 mg/ml; Initial pH = 6 5

*Spegazzinia tessarthra* were the highest phosphate solubilizers (20.9%). The phosphate-solubilizing capacity of *Curvularia lunata* was lower (12.1%) than earlier reported[2] (58.9%) on 14 days' incubation. However, this difference appears to be due to lesser incubation period in the present study and different habitat (forest soils). The *per cent* phosphate solubilization by *Syncephalastrum racemosum* and *Robillarda sessilis* is comparable with the findings of Rudraksha[7]. The inability of *Scolecobasidium* to solubilize phosphate in this experiment is in accordance with the findings of Sethi and Subba Rao[8].

The decrease in post incubation pH of the medium was marginal (0.5–1.8) in majority of the fungi but they solubilized higher amount of phosphate. However, the decrease was higher in *Periconia cambrensis* and *Cladosporium shpaerospermum* (2 2 and 3 respectively) and the amount of phosphate-solubilized was less. This observation that fall in pH and the amount of phosphate solubilized are not correlated, is in conformity with earlier results[2, 3, 9] in which the same relationship was observed in different fungi.

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## *CHLOROCLONIUM GLOEOPHILUM* BORZI—A NEW RECORD FOR INDIA

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*CHLOROCLONIUM GLOEOPHILUM* is being reported for the first time since its original record by Skuja[1] from Rangoon, Burma. The alga came up in one of the cultures of a soil sample collected from Kirkee, Poona. A few observations on its morphology and reproduction are discussed.

*C. gloeophilum* occurred in biphasic cultures as a green scum overlaying the water in the culture flasks. A few bits of such scumlike growth are shaken in sterile distilled water and cultured either on BBM-agar plates or soil water-flasks.

The alga appeared as pseudoparenchymatus mat which is composed of loosely aggregated, round thick-walled cells and from the periphery of the mat radiate branched filaments (figure 1) The peripheral radiating