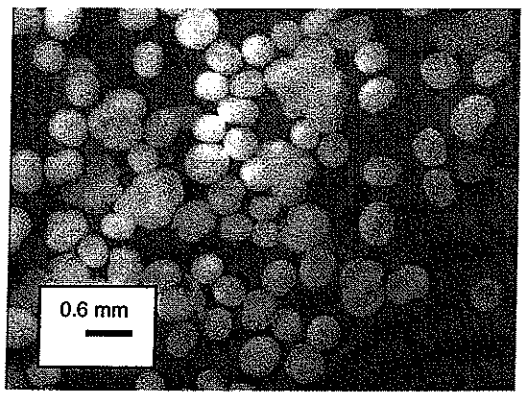


FIGURE 1

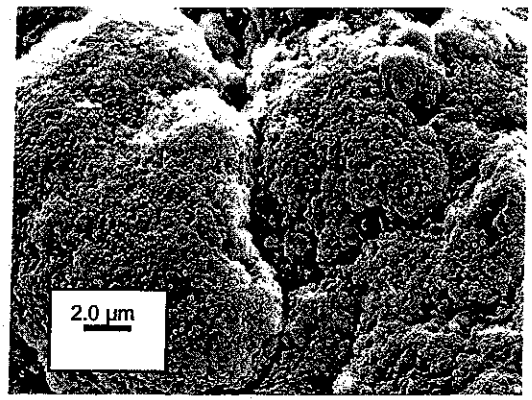


FIGURE 2

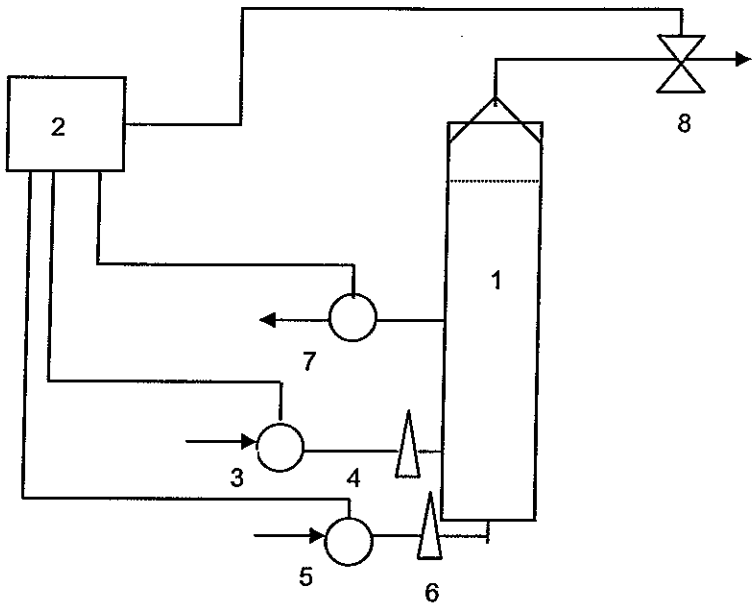


FIGURE 3

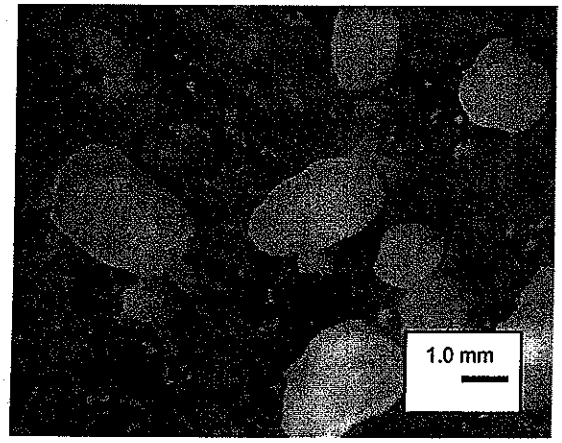


FIGURE 4

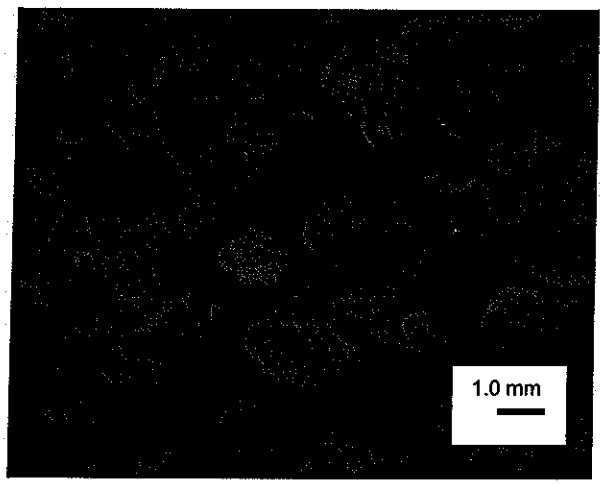


FIGURE 5

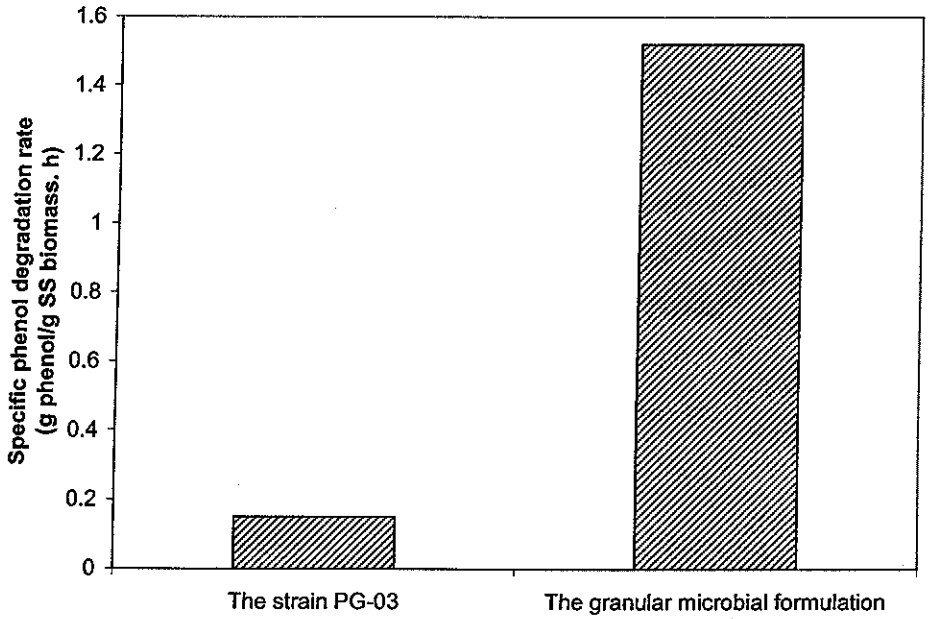

Specific phenol degradation rate
(g phenol/g SS biomass. h)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
The strain PG-03
The granular microbial formulation

FIGURE 6

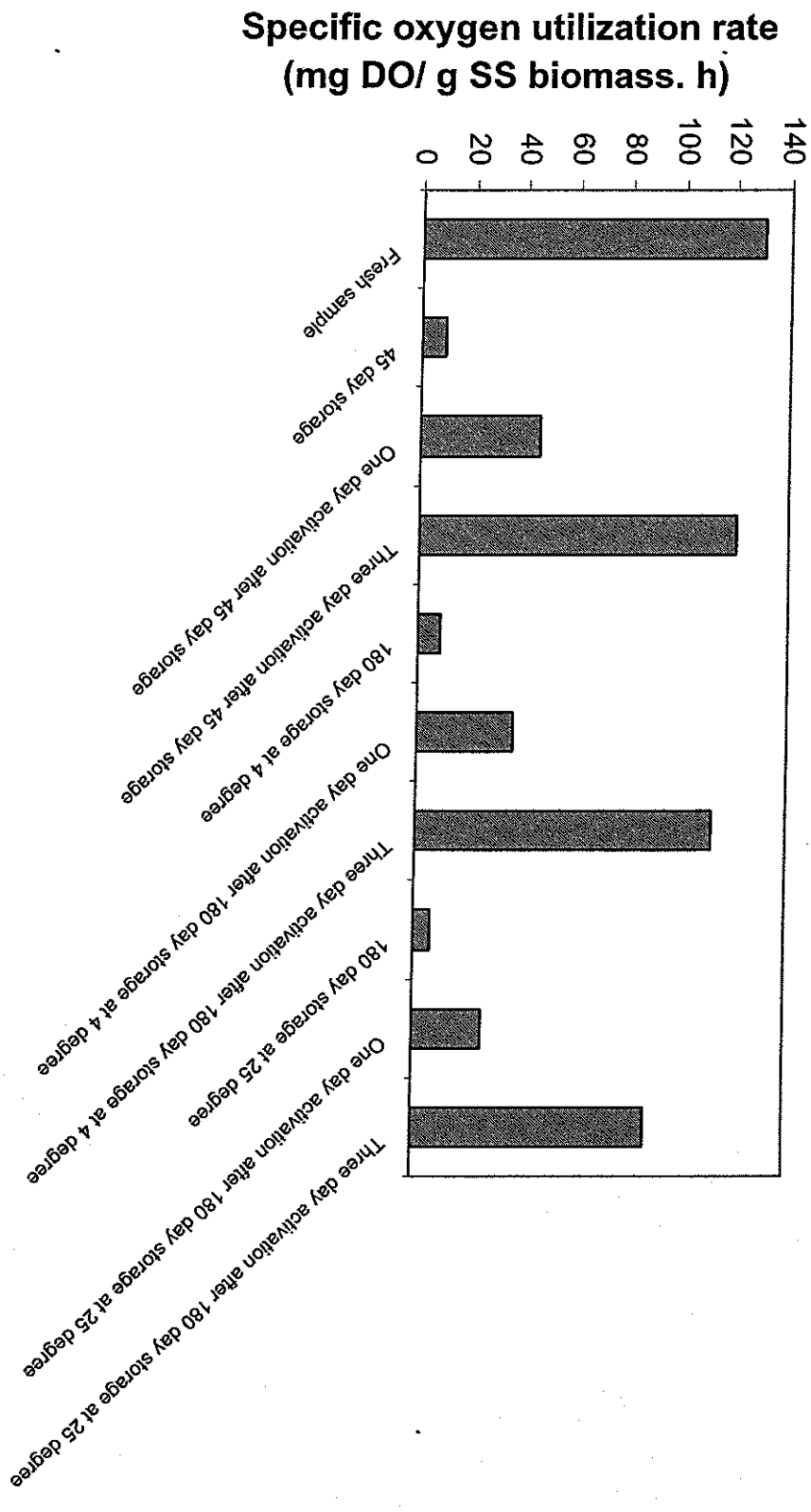

Specific oxygen utilization rate
(mg DO/ g SS biomass. h)
0
20
40
60
80
100
120
140
Fresh sample
45 day storage
One day activation after 45 day storage
Three day activation after 45 day storage
180 day storage at 4 degree
One day activation after 180 day storage at 4 degree
Three day activation after 180 day storage at 4 degree
180 day storage at 25 degree
One day activation after 180 day storage at 25 degree
Three day activation after 180 day storage at 25 degree

FIGURE 7

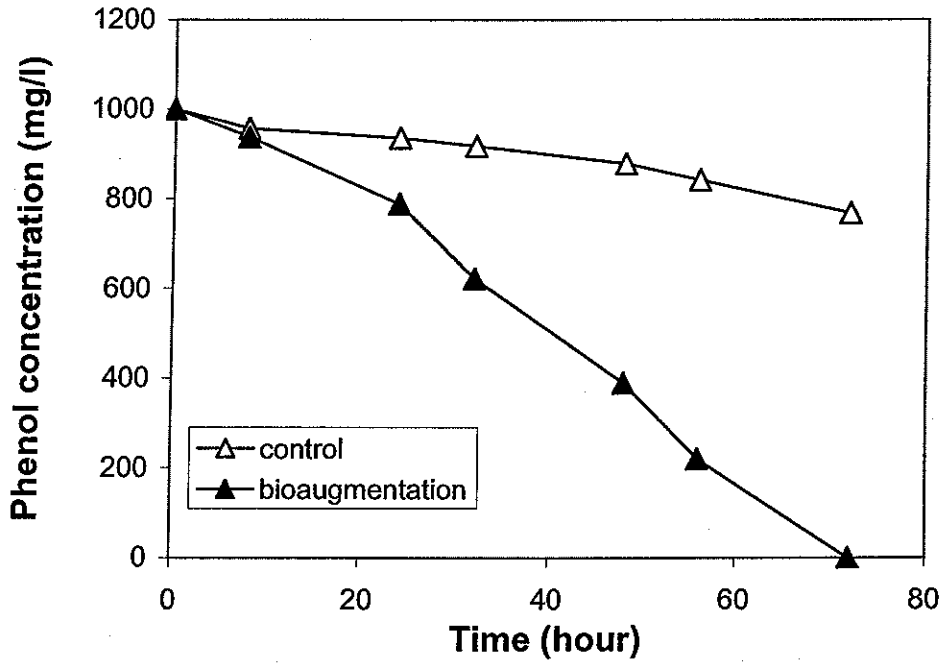

Phenol concentration (mg/l)
1200
1000
800
600
400
200
0
0
20
40
60
80
Time (hour)
control
bioaugmentation

FIGURE 8