





strength Murashige and Skoog inorganic salts, supplemented with 0.4 mg/liter thiamine-HCL, 100 mg/liter Inositol, 2% sucrose, 0.7% phytagar, and the following concentrations of IBA; 0.0, 0.5 and 1.0 mg/liter. The cultures were incubated under a photoperiod of either 16 hours light and 8 hours darkness, or continuous darkness, and a temperature of 26<sup>o</sup>. The effects of two phenolic compounds, Rutin and Quercetin were investigated by adding 10<sup>-3</sup>M of one or the other to Stage III medium containing 10 mg/liter IBA.

## RESULTS

### Establishment and multiplication

Lateral buds elongated to approximately 1-2 cm within 2-4 weeks. After transferring them to Stage II medium, they produced adventitious shoots within 3-4 weeks. As these shoots were repeatedly subcultured, the rate of adventitious shoot development increased, until it reached a five fold increase every 3-4 weeks. The optimal shoot development occurred on medium containing 0.75 mg/liter BA (see Table 1). BA concentrations below this level gave reduced adventitious shoot development. BA concentrations greater than or equal to 1.0 mg/liter gave reduced shoot elongation. This led to the development of short, tight, clusters of buds that failed to elongate. Only if these clusters were tediously separated into individual buds, did they begin to elongate.

Table 1. The effects of benzyladenine on shoot production of P. serotina in vitro. (Gibberillic acid, and IBA supplied at 0.2 and 0.01 mg/liter respectively.)

<u>Benzyladenine mg/liter</u>	<u>No. of shoots/division</u>
0.00	1.2
0.25	1.7
0.50	4.2
0.75	5.3
1.00	3.4
1.50	1.8
2.00	1.4

### Pretransplant stage

Shoots rooted within 10-14 days on Stage III medium consisting of 10 mg/liter IBA. The percentage of rooted shoots was the greatest (90%) when the shoots were incubated in continuous darkness. Light given by a 16 hour light, 8 hours







