The culture of the fungus is deposited in C.M.I. Herbarium (IMI No. 262386).

In nature, infection occurs probably during harvest or in transit penetrating probably through the weak portions of the eyes, the fungus reaches the endosperm and spreads there. At later stages of infection, white to light brown mycelium can be seen on both surfaces of the endosperm.

In the laboratory, inoculation of the coconut fruits was successful through peduncle attachment point, eyes and in dried as well as raw endosperm (figure 1).

A perusal of available literature reveals that this appears to be the first record of *S. commune*, causing fruit rot of coconut.

The authors are thankful to Dr J. E. M. Mordue of C.M.I. Kew, Survey, England for the identification of the culture and Dr S. M. Kazmi for providing the infected material. One of the authors (SNK) acknowledges the award of a fellowship by the UGC.

11 September 1984; Revised 20 November 1984

1. Chaudhari, H. and Johar, D. S., *Indian Sci. Cong. 18th Ann. Meeting*, 1931, **14**, 8.
2. Bose, S. R., *Dept. J.Sci., Calcutta Univ.*, 1940, **2**, 53.
3. Bagchee, K. D. and Bakshi, B. K., *Indian For.*, 1950, **76**, 244.
4. Gupta, K. K., M.Sc. *Thesis, University of Saugar*, 1954, p. 80.
5. Saksena, S. B. and Vyas, K. M., *Madhya Bharati, Univ. of Saugar*, 1964, **11–13(B)**, 15.
6. Fergus, C. L., *Illustrated Genera of Wood Decay Fungi*, 1960, 122, Burgess Publishing Co., Minnesota.
7. Dupont, P. R., *Ann. Report of the Sechelles. Dept. of Agric.*, for the year 1925, 1926, 5.
8. Joseph, T. and Radha, K., *Tech. Bull.*, **2**, *Cent. Plant. Crops Res. Inst. Kasaragod*, 1979, **51**, 91.

AUXIN + KNO_3 INDUCED REGENERATION OF LEGUMINOUS TREE—*LEUCAENA LEUCOCEPHALA* THROUGH TISSUE CULTURE

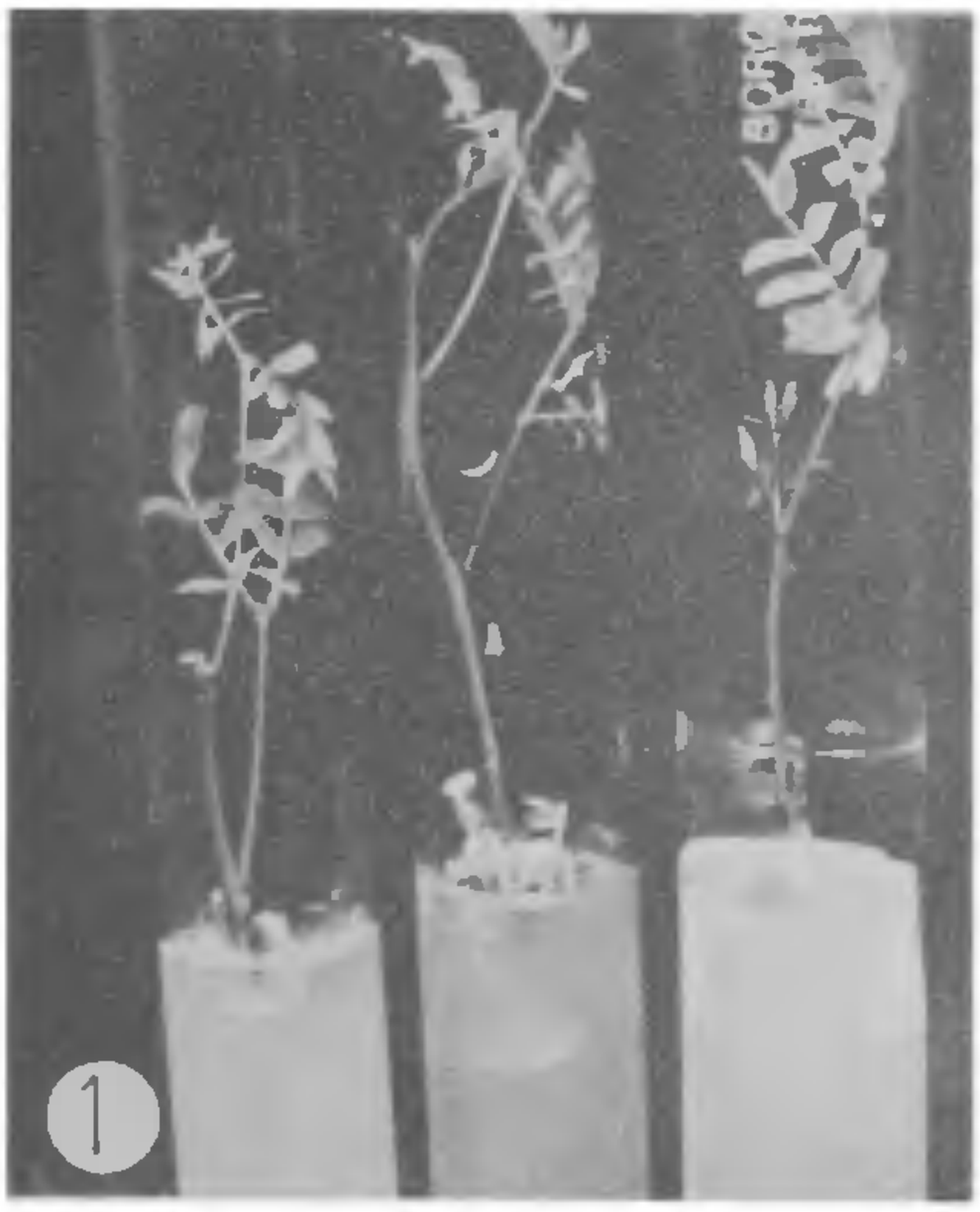
KARABI DATTA and S. K. DATTA
Department of Botany, Visva-Bharati University, Santiniketan 731 235, India.

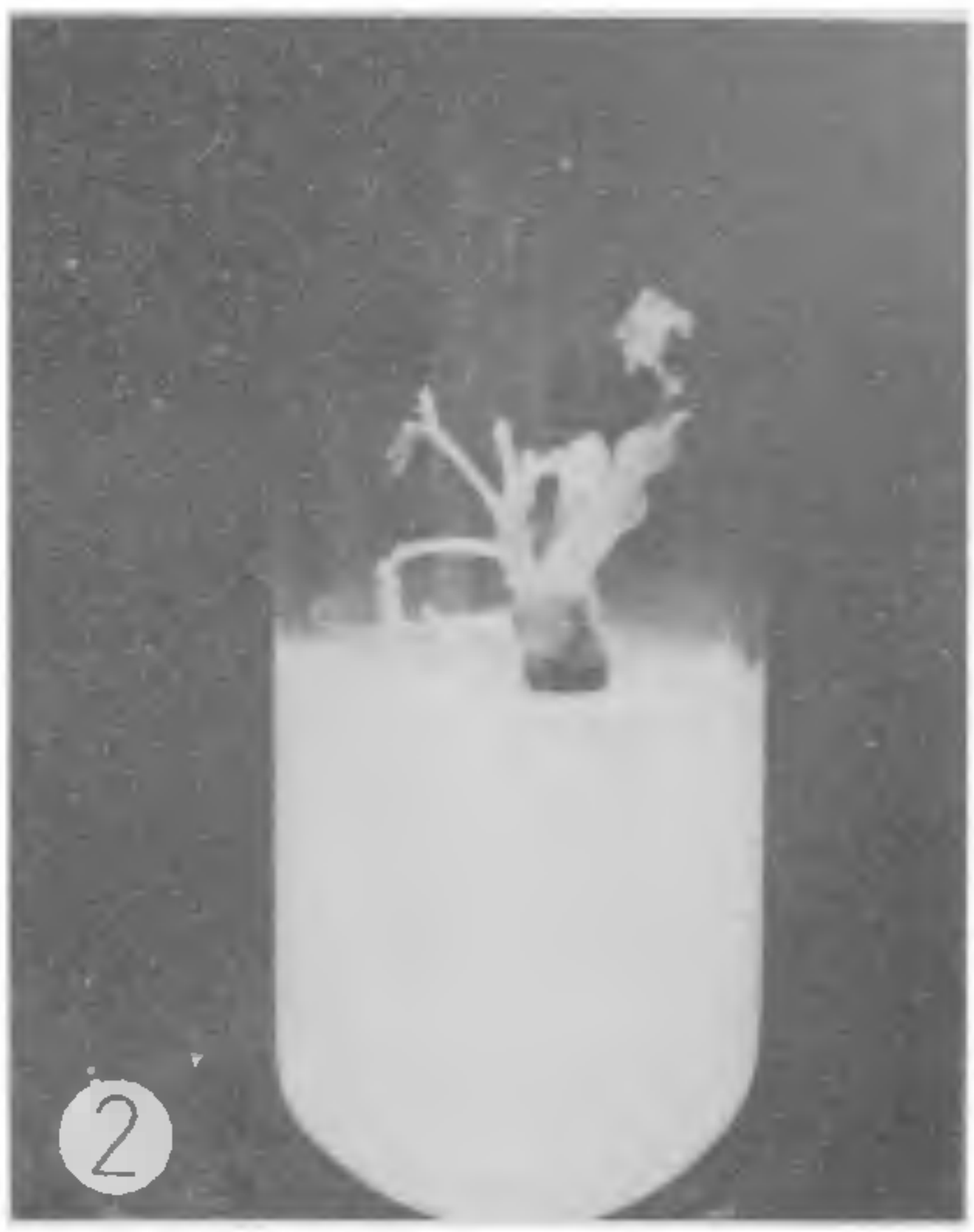
LEGUMES have generally failed to respond to organ induction *in vitro*. However, limited success has been noted in recent years [1–9]. *Leucaena leucocephala* (Lam) de Wit (Hawaiian Giant) is a protein-rich fodder plant, besides its other uses as firewood, windbreak, erosion and fire protection, shade for other plants[10]. We report here, rapid propagation of this plant on MS medium[11] with auxins (IAA, indoleacetic acid or NAA, naphthaleneacetic acid). Regenerants could be maintained on MS_1 medium with higher concentration of KNO_3 (MS + double the concentration of KNO_3 to that of original MS).

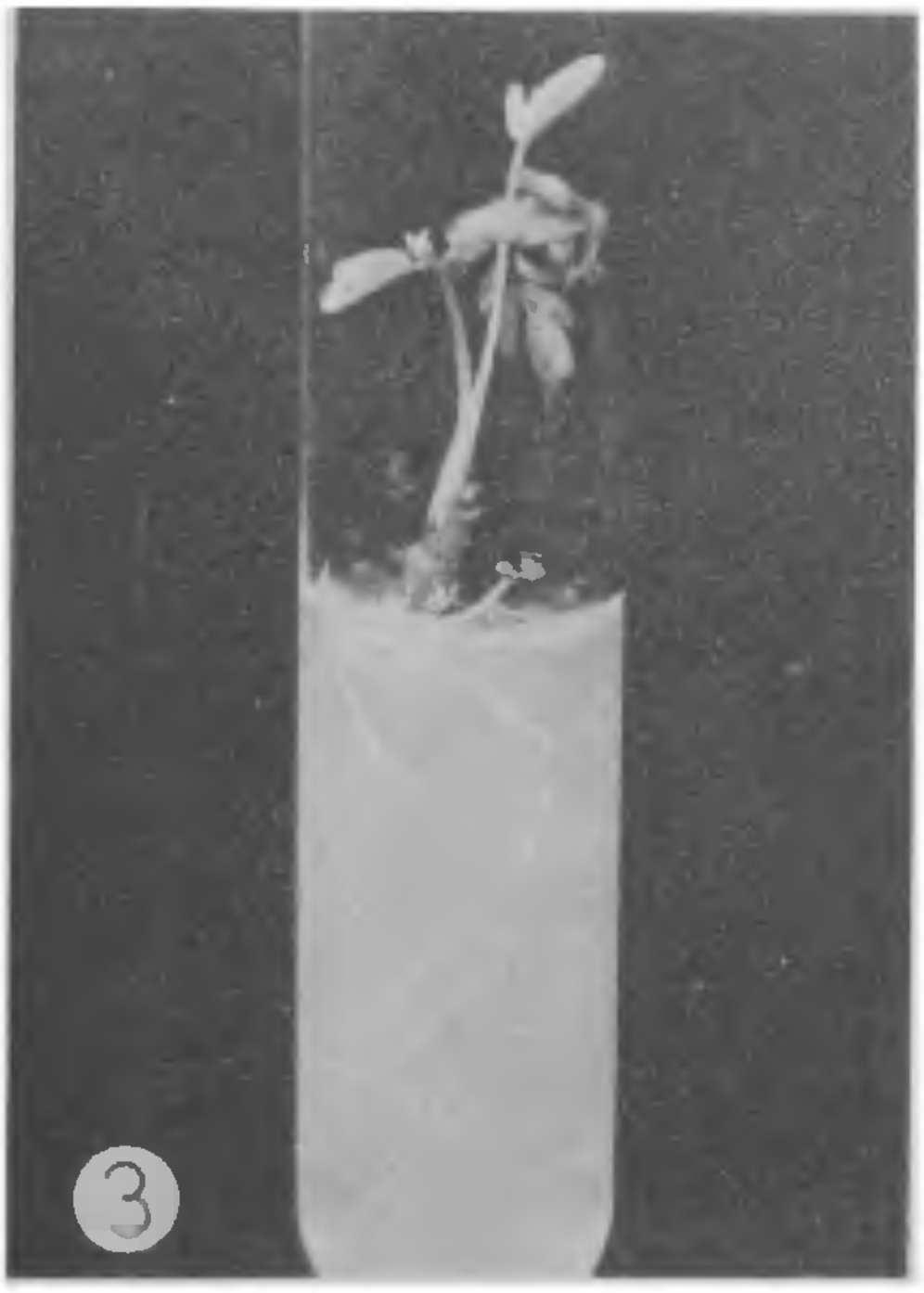
Nodal explants (1–1.5 cm) were excised from a healthy mature tree of *L. leucocephala* var K8 growing in the University garden.

After sterilization as described earlier[12], explants were cultured on MS medium containing 30 g/l sucrose, 0.9 % agar and various concentrations of auxins (IAA; IBA, indolebutyric acid; IPA, indole propionic acid and NAA), cytokinins (BAP, benzylamino purine and Kn, kinetin), AdS (adenine sulphate) and GA (gibberellic acid), alone and in different combinations. The cultures were maintained at 26 + 4°C in 16 hr photoperiod at a light intensity of *ca* 2000–3000 lux. The nodal explants with shoots or regenerants were subcultured at 30 day intervals.

The nodal explants responded to auxins and cytokinins (table 1). IAA (1 mg/l) and NAA (2 mg/l) were found suitable for regeneration of plantlets; other auxins, AdS and GA did not have any effect. Shoots readily developed from axillary buds of the explants (figure 1), irrespective of the hormones used (both auxins excepting IPA and cytokinins, used independently or in combinations, table 1). Multiple shoots (3–6 shoots) developed from axillary bud primordia of each explant in response to BAP (2 mg/l) after 30 days of culture (figure 2). On MS + IAA the nodal explants produced a vigorous shoot with a large number of long roots (figure 3). Dwarf shoots with one or two prominent roots were obtained from nodal explants in response to NAA (figure 4). Vigorous roots developed from the *in vitro* raised isolated shoot buds when subcultured on MS medium with IAA or NAA (1 mg/l, each). The regenerated plantlets did not survive after 30–40 days of culture. However, this problem could be overcome by culturing the plantlets on MS medium with a higher dose of KNO_3 (double the concentration to that of MS, designated as MS_1) in addition to IAA or NAA. This treatment resulted in the production of more vigorous roots, better growth, higher percentage and long term survival of regenerants (table 1). Earlier workers[13–15] had reported only shoot regeneration or plantlet formation with a weak root system from seedling explants.







Figures 1–4. 1. Shoot development from nodal explants on MS medium + BAP (1 mg/l). **2.** Multiple shoots on MS medium + BAP (2 mg/l). **3.** Regenerant on MS medium + IAA (1 mg/l). **4.** Regenerants on MS medium + NAA (1 mg/l).

Table 1 *Response of nodal explants of Leucaena leucocephala to various growth regulators*[a].

Growth media[b]	% of shoot formation		% of root formation		% of regeneration plants		Nature of response[c]
	15 days	30 days	15 days	30 days	15 days	30 days	
MS + 0.5 IAA	70	70	0	10	—	10	small shootings
MS + 1.0 IAA	80	90	30	60	30	60	shoot with vigorous roots
MS + 2.0 IAA	40	60	—	—	—	—	only shoots
MS + 0.5 NAA	80	80	—	—	—	—	vigorous shoots
MS + 1.0 NAA	80	90	—	20	—	20	vigorous shoots
MS + 2.0 NAA	70	80	—	40	—	40	shoots with stout roots
MS + 1.0 IPA	—	—	—	—	—	—	—
MS + 1.0 IBA	20	30	—	—	—	—	poor shoots
MS + 1.0 BAP	80	100	—	—	—	—	vigorous shoots
MS + 1.0 Kn	90	100	—	—	—	—	vigorous shoots
MS + 1.0 BAP + 1.0 IAA	40	60	—	—	—	—	moderate shoots
MS + 1.0 BAP + 1.0 NAA	40	40	—	—	—	—	moderate shoots
MS + 0.5 IAA + 0.5 NAA	40	90	20	20	—	20	poor rooted shoots
MS_1 + 2.0 BAP	80	100	—	—	—	—	multiple shoots
MS_1 + 1.0 IAA	80	100	60	80	60	60	vigorous rooted shoots
MS_1 + 2.0 NAA	70	80	60	80	60	80	vigorous rooted shoots

[a] data scored at the end of 15/30 days of interval; 20 explants/treatment;
[b] concentration of growth substances are expressed as mg/l; MS_1 (MS + more KNO_3);
[c] no response.

This note reported the successful *in vitro* clonal multiplication of mature trees of *L. leucocephala.* Further work is in progress to obtain successful transfer of regenerants into the soil.

Financial assistance from CSIR and UGC is gratefully acknowledged. The authors thank Prof. H. Y. Mohan Ram and Dr G. C. Mitra for helpful discussions and advice.

26 October 1984

1. Meijer, E. G. M. and Broughton, W. J., *Physiol. Plant.*, 1981, **52**, 280.
2. Kartha, K. K., Meristem culture, In: *Plant tissue culture methods*, (eds) L. R. Wetter and F. Constabel, Saskatchewan, Canada, NRCC, 1982, p. 24.
3. Mukhopadhyay, A. and Mohan Ram, H. Y., *Indian J. Exp. Biol.*, 1981, **19**, 1113.
4. Gresshoff, P. and Mohapatra, S. S., In: *Tissue culture of economically important plants*, (ed.) A. N. Rao, Singapore, COSTED, 1982, p. 11.
5. Mohan Ram, H. Y., Mehta, U. and Ramanuja Rao, I. V., In: *Tissue culture of economically important plants*, (ed.) A. N. Rao, Singapore, 1982, p. 66.
6. Datta, S. K., Datta, K. and Pramanik, T., *Plant Cell Tissue Organ Culture*, 1982, **2**, 15.
7. Gharyal, P. K. and Maheshwari, S. C., *Plant Cell Tissue Organ Culture*, 1982, **2**, 49.
8. Sinha, R. R., Das, K. and Sen, S. K., *Plant Cell Tissue Organ Culture*, 1982, **2**, 67.
9. Datta, S. K. and Datta, K., *Leucaena Res. Reports*, 1984, **5**, 22.
10. Manfred, S., Meulen, U. and El-Harith, E. A., *Leucaena Res. Reports*, 1983, **4**, 13.
11. Murashige, T. and Skoog, F., *Physiol. Plant*, 1964, **15**, 473.
12. Datta, S. K., *Indian J. Exp. Biol.*, 1981, **19**, 566.
13. Glovak, L. and Greatbatch, W., *Leucaena Res. Rep.*, 1981, **3**, 81.
14. Ravisankar, G. A., Wali, A. and Grewal, S., *Leucaena Res. Rep.*, 1983, **4**, 37.
15. Nagmani, R. and Venketeswaran, S., *Leucaena Res. Rep.*, **4**, 89.