IN VITRO CULTURE OF EXPLANTS FROM A SINGLE PEA SEED[1/]

Filippone, E. C.N.R., Centro Studi Miglioramento Genetico Ortaggi, Portici, Italy

A method was devised to obtain several explants from a single pea seed as a way of meeting certain needs in breeding, physiological, and genetical studies.

Seeds of cv 'Proteo' were surface sterilized with calcium hypochloride (2%, 20 min), rinsed several times with sterile water, and sown on sterile medium (deionized water plus agar 0.8%) , and then placed in a growth chamber at 24C in continuous light. Seven-day-old seedlings were dissected as shown in Fig. 1 to obtain from each: a) root; b) epicotyl bud; c) epicotyl segment; d) bud with only one cotyledon; e) shoot apex. All operations were performed under a dissection microscope in a laminar flow hood. Table 1 lists the media used and the potential uses for the explants. The explants were incubated in a growth chamber at 24C, under 16 h light/8 h dark. Only the roots were grown in total darkness.

Callus proliferation occurred after 15 days in the epicotyl segments, and a whole plant was obtained from the bud with only one cotyledon. After 40 days each epicotyl bud produced an average of eight shoots.

Using this technique, a single seed can be used to mass propagate genetically identical tissue for different studies. Moreover, the cotyledon without embryo can be used for analysis ot seed protein.

T. Raggio, M., N. Raggio, and J. G. Torrev. 1957. Amer. J. Botany 44:325-334.
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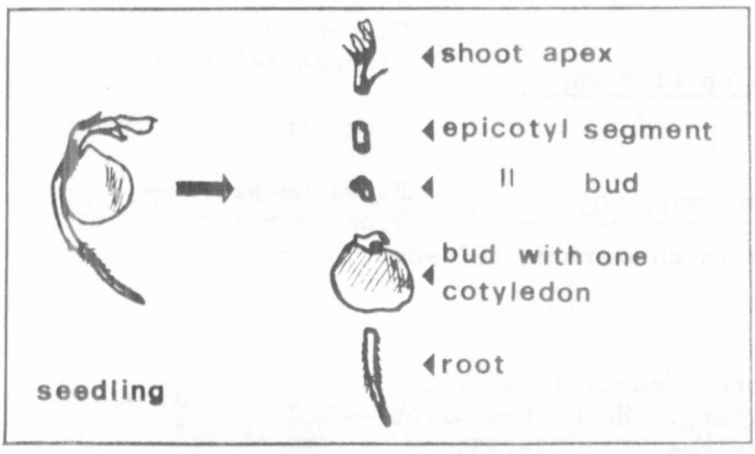

Fig. 1. Explants from a single pea seed.

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