

## Setting up a Plant Tissue Culture Laboratory

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Plant Microculture Laboratories was established in April 1992, with an initial goal to propagate calla lilies (*Zantedeschia*) for local nurseries to grow on to export bulbs and the longer term aim of becoming a contract tissue culture laboratory, undertaking the development and propagation of a wide range of crops, cut flowers, and ornamentals.

The laboratory was set up in an existing building which left some compromises in the design. The available space was allocated to two incubation rooms, a supervisors office and a transfer area to accommodate 12 laminar-flow hoods. The kitchen and development laboratory were established in a separate area.

It soon became apparent that the process of tissue culturing large volumes of plants requires an encompassing quality system and a decision was made to implement the ISO 9002 system which is internationally recognised and well suited to such an operation. We expect to gain accreditation to this standard in October this year (1994).

Calla lilies were the first crop produced in the laboratory and in our first season in excess of 1 million tissue cultured plantlets were shipped to local growers. The callas are initiated from mother bulbs which are virus tested by ELISA prior to entering the laboratory. Appropriate secondary buds are selected for tissue culture and the mother bulb is then grown on to flowering to check for high health and true colour. Once initiated, each meristem is checked for sterility prior to transfer to a media containing high cytokinin to promote bud multiplication. In the latter stages the cytokinin in the media is reduced to promote bud extension and finally rooting, and the plantlets are shipped from the laboratory as a well-rooted, healthy, young plant approximately 5 cm high.

After 2 years we are producing a wide range of plants and putting considerable emphasis on new product development and the application of methodology which will reduce the labour content of our business. In the future we plan to become involved in gene transfer technology, through collaboration with university and government department research facilities. Our commitment is to produce a quality product through an innovative and service-oriented approach, backed up by an ongoing development programme.