

to turn out "experts," in whatever phase of propagation. If the educators can give us people who can think, who can communicate and who possess the disciplines on which expertise can be built that is all we should expect.

**THE "KNOW HOW" IN PLANT PROPAGATION EXPECTED
FROM COLLEGE GRADUATES:
HERBACEOUS AND TISSUE CULTURE PROPAGATION**

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I feel our universities are offering a well-rounded academic curriculum in horticulture education and in most cases very good programs in plant propagation. The basic information is offered; the student who is most interested and studious becomes the leader of tomorrow.

The universities cannot be faulted in graduating students who are not talented, employable people, ready to assume immediately the management responsibility of general propagation, whether it be the sexual or asexual propagation of evergreen or herbaceous plant materials.

If there is a fault that prevails in preparing students for immediate takeover of a progressive propagation program, it lies in too little practical, hands-on training. At Purdue, ten weeks of summer work in industry is required to obtain the horticulture degree. There should be at least two twelve-week work summers required; even then, the student will only be partially trained for major responsibility.

Tissue culture, perhaps better titled micro-culture, is highly technical. A student desiring to work in this field must pursue special academic training, with courses directed toward this goal, over a two year period, or longer, before he or she is capable of lab management. A degree is not necessary for the culture transfer process. There are greater opportunities in this field of endeavor for those who have attained at least a masters' degree in lab management.

In my opinion the greatest values one should get out of college are; 1) learn to be a problem solver; 2) know where to get information; 3) keep an open mind to change; 4) keep updating knowledge.

Aside from the university degree, there are other qualifications required for serious consideration by industry for employ-

ment. Among them, INITIATIVE, a willingness to take on responsibility and DEDICATION to the pursuit of excellence.

A few aspects of propagation a newly employed college graduate should know upon getting into his career, would be: knowledge of rooting media, methods of environmental control, auxins, timing of cutting harvest, preparation of cuttings, direct rooting vs. bed rooting, ability to synchronize work for year round schedules, fertility control, pH needs, and disease control. There are many many others.

Other things which are considered by employers are poise, warmth, personality, business sense, dependability, skill and punctuality. These cannot be taught easily — usually they're learned away from the school environment. Just where it starts, I don't know, perhaps at home or by a teacher who ignites the fire.

The universities are contributing greatly to mankind, but the individual, if he or she is to succeed, must match it with personality, desire and determination.

TEACHING PLANT PROPAGATION LABORATORIES: VEGETATIVE PROPAGATION

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To be effective, plant propagation at the collegiate level must be designed as a lecture-laboratory course. The lecture-laboratory teaching mode enables students to acquire knowledge and become proficient with the fundamental skills and concepts involved in propagating horticultural crops.

Plant propagation in most universities is taught at the sophomore level, with few of the students having had the benefit of a practical nursery or propagation experience. In fact, more than 60% of today's undergraduate students are from urban backgrounds and may be experiencing propagation of plants for the first time. Consequently, laboratory projects must be designed to demonstrate the simplest concepts in regard to both asexual and sexual propagation.