

THE ADVANTAGE OF USING SEEDLINGS IN SHADE TREE PRODUCTION

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INTRODUCTION

The mission of this paper is to present some thoughts on the place of sexual propagation in the nursery industry. There needs to be an intentional balance of sexual and asexual propagation used by our industry to fulfill world-wide environmental plant needs, i.e. "Global Releaf". This discussion assumes careful screening and selection of seed sources. I have purposely not referred to specific plants since I feel it is important for the reader to "dream" and think of his or her applicable plants.

ADVANTAGES OF SEXUAL (SEED) PRODUCTION

Variability. It is essential in programs such as "Global Releaf" for the propagator, as the expert, to see that a balanced variability is maintained in plant production. This should ease pressure on Integrated Pest Management Programs and aid in the reduction of chemical controls. It is crucial that seed sources are carefully screened and matched to specific environmental situations.

Aesthetics. Part of the beauty of our environment is that not all plants of a species are exactly alike. Variability is pleasing to the eye. Wouldn't life be boring if all humans were exactly alike! I'm sure the law profession would be against it!

Economics. It is simply cheaper generally, to propagate plants sexually than asexually. Where this is the case, we need to carefully analyze our environmental needs to see if they are enhanced by variability.

Shorter response time to high volume needs. Many times sexual propagation can be used in specific cases to fulfill a market demand considerably faster than asexual propagation. Demands for plants will increase dramatically through such programs as "Global Releaf". Private industry needs to be prepared to meet these demands with quality and quantity plant material—or face increased governmental competition from state and federal nurseries.

Ease of transportation. Seed is much simpler and easier to transport than cutting wood, buds, or unrooted micro-cuttings. Seed can be easily transported.

Ease of storage. Seed can be easily stored in small areas with minimum care for long periods of time. Stock plants require high maintenance and relatively larger spaces.

Juvenility. Seed automatically refocuses the plant to a juvenile state. This has many advantages for the propagator.

No graft incompatibility. This is a very important advantage since this problem can occur over a long period of time.

Root systems may be better. Sometimes root systems of seedlings are superior to asexually propagated plants.

Greater chance for the propagator to observe variation. Many improved plants have been first observed in seedling lots by propagators. This is a tremendous source of improved and new plant material. There are thousands of propagators but only hundreds of plant breeders!

Sexual propagation is the best way. Some plants simply are more vigorous, or their characteristics are best maintained by sexual propagation.

Broader preservation of 'gene' bank. Sexual propagation provides a world wide genetic storage facility. It gives a broad perspective to the problem rather than a few facilities scattered around the world subject to "tunnel vision" and or catastrophic situations. It provides a world-wide laboratory to screen for pest and pollution resistance.

Less net impact on environment. It is important every individual, industry, and government analyze their specific environmental impact. The propagator is not immune— in fact we should be the leaders! In many cases, sexual propagation has a lesser negative impact on the environment. Less oil, gas, electricity, polyethylene, rooting hormones, water, nitrates, etc. are often consumed by sexual compared to asexual propagation. Here is a chance to really dream and analyze.

DISADVANTAGES OF SEXUAL PROPAGATION

Every plant is not identical.

CONCLUSION

As professional propagators and educators we all have a leadership responsibility to intentionally dream and evaluate the environmental impact of sexual and asexual propagation of plant material. This must then be translated by us into action! The ball is clearly in our court as professional propagators and horticultural educators.