

Principles of propagation by cuttings
Review Questions- Dr. Fred Davies, p2

1. What are some advantages to using clones in horticulture?

Advantages of using clonal systems are: Producing plants with superior characteristics, the same form, can command a higher price for the higher uniformity and quality.

2. How is phloem involved in rooting?

Phloem is involved in the translocation of carbohydrates and auxin.

3. What is the most common form of rooting from cuttings, and how does it work?

De novo rooting is the most common form of rooting from cuttings.

In de novo adventitious root formation, a new area of meristematic tissue is formed among the parenchyma cells. This takes place at the anticlinal division in the phloem ray parenchyma.

4. Why do certain cuttings root more quickly and easily than others?

Some plants are easier to root than others because they more easily go through the first two stages of adventitious root formation (dedifferentiation and initiation of slightly organized cell groups). Often, as plants become mature, they are more difficult to root (or take longer) than when they are juvenile form. It takes about three times as long for a mature cutting to get first rooting as a juvenile cutting. After first rooting, they are about the same

5. What are sclerids?

Sclerids are lignified structures which help support the plant. They do not limit rooting. When sclerids differentiate from parenchyma cells and become functional, they lack a nucleus, which means they cannot undergo further cell division.

6. What is the most common way to apply auxin and why?

Quick dip in liquid auxin is the most common way to apply auxin because there is much greater uniformity than with spray or powder.

7. What are some safety measures to keep in mind when using auxin?

It is important that auxins have an EPA-approved label because they are a pesticide. You should not re-use auxins. Dispose extra at the end of the day, because the concentration can alter over time.

8. Why would growth retardants be in a rooting mix?

Growth retardants are used in a rooting mix to keep energy away from shoot growth so the energy can be used for rooting.

9. Will all plants respond well to auxin?

No, the plant has to have the genetic potential to be able to respond to the stimulus of auxin and go ahead and root.