Propagation of Herbaceous Cuttings Lab Exercise

This laboratory will introduce you to propagating herbaceous perennials from stem cuttings, leaf-bud cuttings, leaf cuttings, and root cuttings. Practicing propagation by these various methods will illustrate differences in ease and effectiveness among the various types of cuttings with respect to rooting success.

The objectives of this lab are to:

- Familiarize students with types and methods of herbaceous cuttings
- Demonstrate proper procedures for stem, leaf, leaf-bud, and root cuttings
- Compare differences in rooting success between herbaceous cuttings treated with and without rooting hormone

For this lab, you will need two flats or pots, media provided by your lab instructor, tags to label treatments, a rooting hormone such as Hormodin, a container to dip cuttings into the rooting hormone, a pruning device, and herbaceous perennial plant material.

Fill both flats with a substrate recommended by the lab instructor. You may need to first line the flats with paper towels to retain substrate if the drain holes are too large. Once flats are filled, water in to saturation to ensure a stable rooting media.

The methods for this lab are as follows:

1. Take 10 cuttings of each of the four types of herbaceous cuttings (stem, leaf, leaf-bud, and root) from plant material provided by the lab instructor.
2. Treat half (5) of each of type of cutting with rooting hormone and the other half (5) will remain untreated as control.
3. Stick hormone-treated cuttings in one flat and control cuttings in the other flat.
4. Label flats accordingly and place under mist benches.

Generally, most of these herbaceous materials do not benefit from auxin treatment, although some may. However, when such herbaceous cuttings are treated with root-promoting hormones, they root more uniformly, and develop a larger root system.

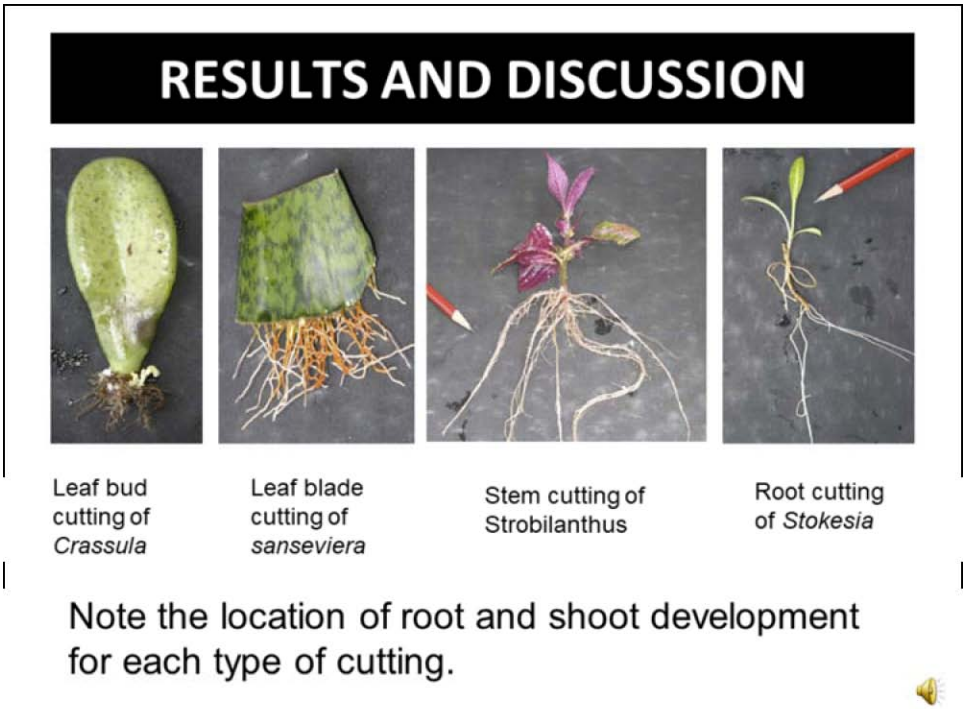
Remember that stem cuttings should generally be 3 to 5 inches in length and have 2-3 nodes. Some species, such as sage, can be propagated with single-node cuttings. Cuttings should be uniform in length and size.

In general, the proximal end of root cuttings need to be exposed just above the surface of the substrate to be stimulated by light. To test effects of exposure, stick a few of the root cuttings completely below the surface of the substrate and some slightly exposed at their proximal end.

After sticking your cuttings, the flats should be full and labeled accordingly. For root cuttings, it

is especially important to label cuttings for future location. Flats are now ready for transfer to mist benches.

Data should be collected on rooting success 2-6 weeks after sticking depending on the species



selected by your lab instructor. First, remove substrate from roots by washing substrate gently from roots in water as done in previous labs. Record whether rooting occurred, number of roots and root length for all cuttings. For each of the two treatments, calculate rooting percentage, mean number of roots, and mean root length for each cutting type and species. Discuss observed differences among treatments and cutting types.