Peperomia and Variegation

Variegation

Variegation refers to the appearance of differently coloured zones, often in irregular blotches or stripes, on the leaves, and sometimes stems, of a plant. Variegation can arise in multiple ways; the type of variegation displayed by Peperomia arises from the production of chimeras. Chimeras form when two or more genetically different cells are present in the same organ. The non-green coloured cells arise from defectively mutated plastids that lost their chlorophyll. Some chimeras are stable and easily propagated (periclinal), while others (mericlinal and sectorial) are unstable, easily revert to the wildtype phenotype when propagated (ie. no loss of chlorophyll).

Species used: *Peperomia obtusifolia* (Wildtype and a variegated variety)

Techniques used: Leaf cuttings & stem cuttings

These techniques can be applied to any *Peperomia* species. Leaf cuttings can also be applied to African violets, begonia rex, snake plants, panda plants and jade plants, among many others. Stem cuttings can similarly be used with many other herbaceous species, but also some woody species.

Leaf Cuttings

A leaf blade or whole leaf (blade and petiole) are used to grow a new plant. In leaf cuttings, adventitious* buds, shoots, and roots form at the base of the leaf, or along its midrib. The planted leaf provides resources for the adventitious organs but does not become a part of the new plant.

Stem Cutting

A piece of stem with at least one node (bud) can be used as a stem cutting. Since these cuttings contained a potential shoot system (bud) they only need to form adventitious roots; for this reason, stem cuttings are more likely to maintain the variegated phenotype.
*Adventitious organs = organs produced by reversion of parenchyma cells to more primitive cells

Supplementary Readings


Acknowledgments

Thank you to Raina Fan for giving a tutorial on video production, to greenhouse management for allowing me to use the space and materials, and to Professor Donnelly for supervising me as a special topics student.