

Mango Propagation

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Three Ways to Propagate Mango

There are three ways to propagate or multiply mango trees: by seed, air layering, and the preferred way, grafting.

By Seed

Mango varieties can be classified by the type of seed the tree produces: monoembryonic or polyembryonic (Figure 1). The origin of the former is Southeast Asia and for the latter it is India. The seeds of monoembryonic varieties produce only one shoot or sprout when they germinate. The resulting seedling can vary from the mother tree in fruit quality and appearance. Many mango trees in

Guam are monoembryonic. They are typically poor fruit producers, so monoembryonic seeds are not desirable for propagating new trees by seed.

The seeds of polyembryonic varieties produce multiple shoots. When the shoots develop true leaves, the shoots need to be separated and planted in individual pots. The resulting seedlings are “true to type,” or genetically identical, to the mother tree. Polyembryonic types are highly desired in propagation by seed (Figure 1).

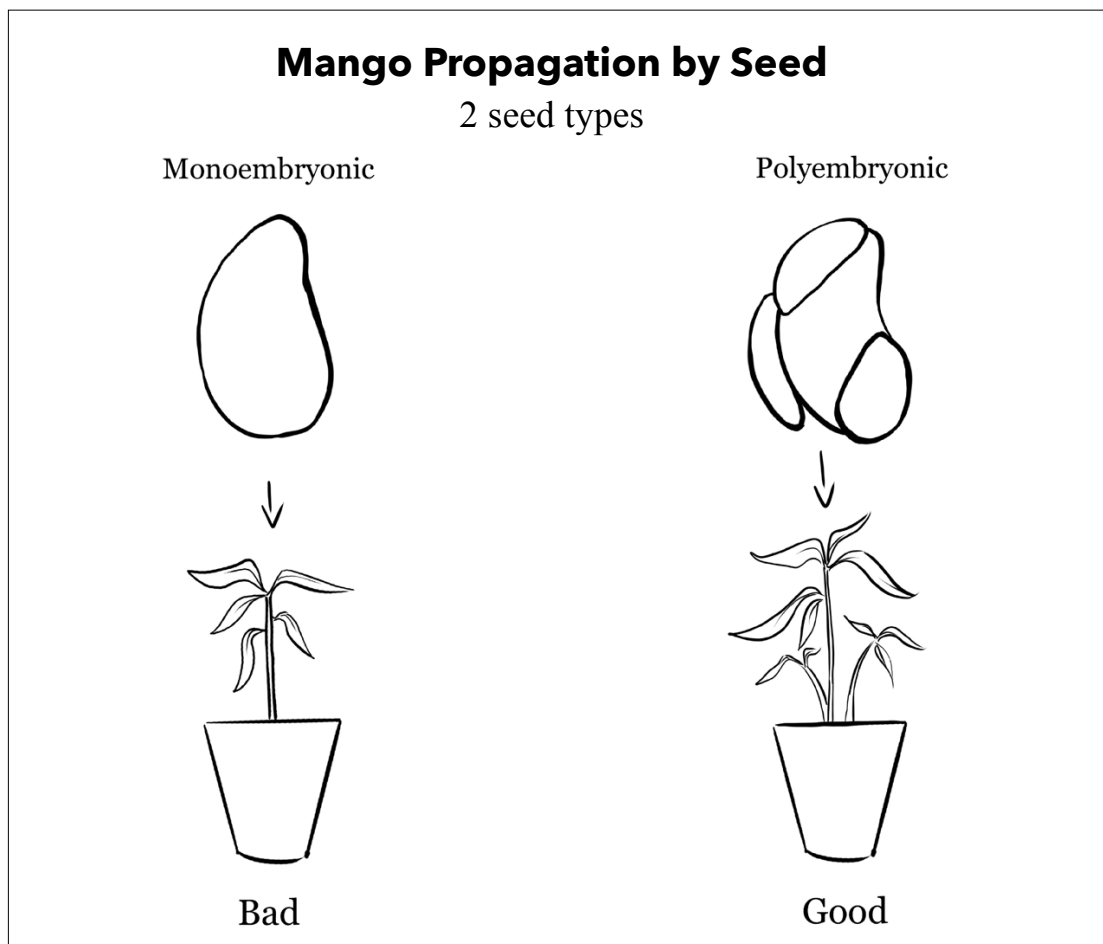


Figure 1
Polyembryonic seed is the preferred type when propagating mango by seed.

Air Layering

Air layering is a technique of vegetative propagation where a branch is girdled, and enclosed in a moist medium, such as sphagnum moss, until roots have formed. The branch is then removed and planted in a pot with potting soil (Figure 2). Once it has sufficient size, it can be transplanted into the field or garden.

In Guam, air layering is often confused with grafting, but the two are very different propagation techniques and produce very different results.

Air layering is not recommended for mango propagation for two reasons. First, there is a low rate of success. Second, air layering produces fibrous root systems. These are weaker roots than the tap roots produced by seed propagation. Tap roots provide deep anchorage, which is a desirable feature on typhoon-prone Guam.

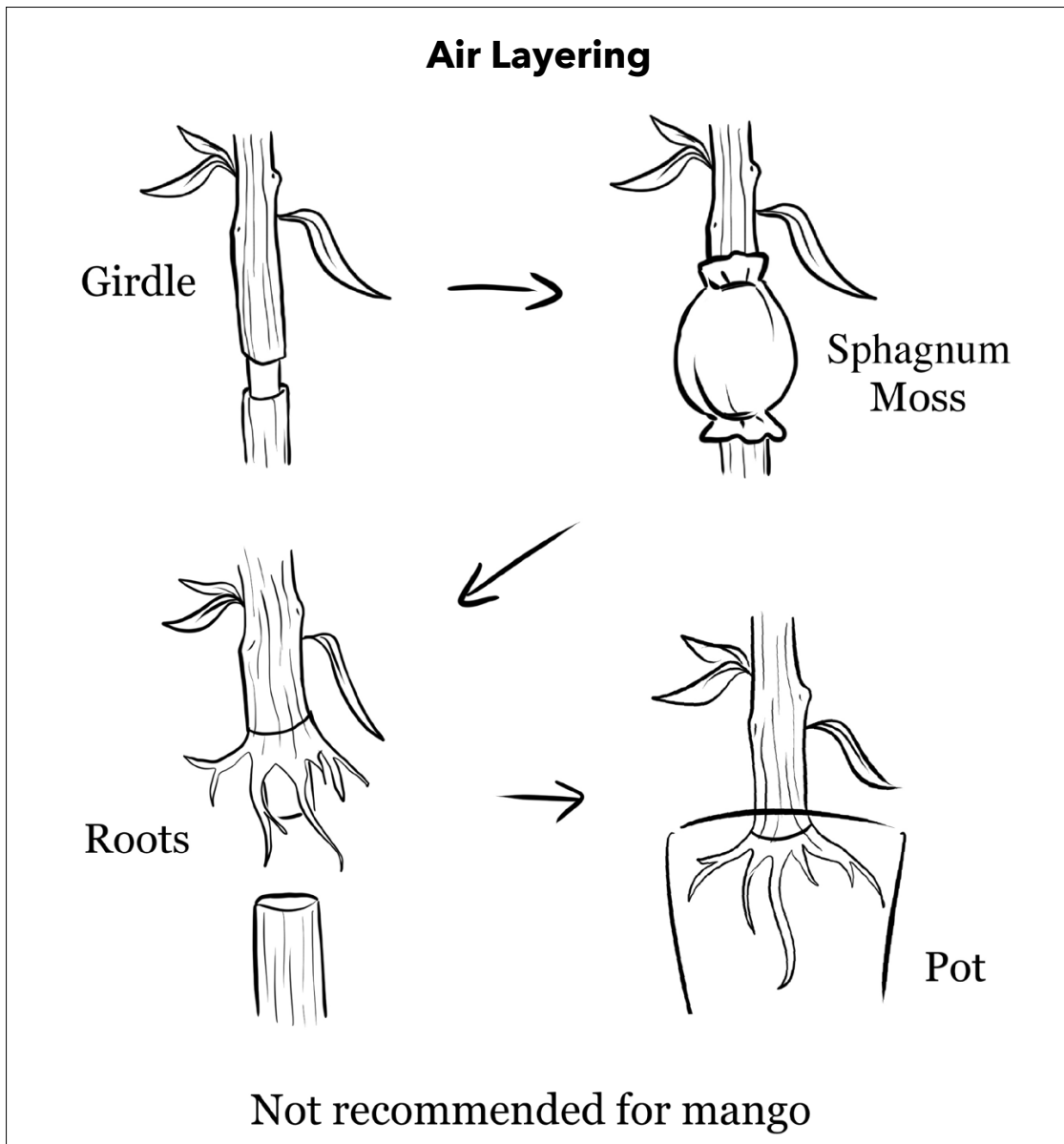


Figure 2
Air layering is not recommended as a propagation technique for mango because it produces trees with weak root systems.

Grafting

Grafting is a horticultural technique of splicing two different trees together to create a very desirable tree (Figure 3). The top is the scion, and the bottom is the rootstock. There are many ways of combining the two. Two examples of common techniques are the cleft, or wedge, graft and the whip and tongue, or beveled, graft. Grafting can produce a tree with highly desirable characteristics: 1) 3-5 years to first fruit, 2)

large, sweet, and fiber-free fruit, 3) regular and heavy fruit production, 4) compact tree form, and 5) a tap root for deep anchorage.

Obtaining these desirable characteristics is why grafting is the recommended technique for propagating mango.

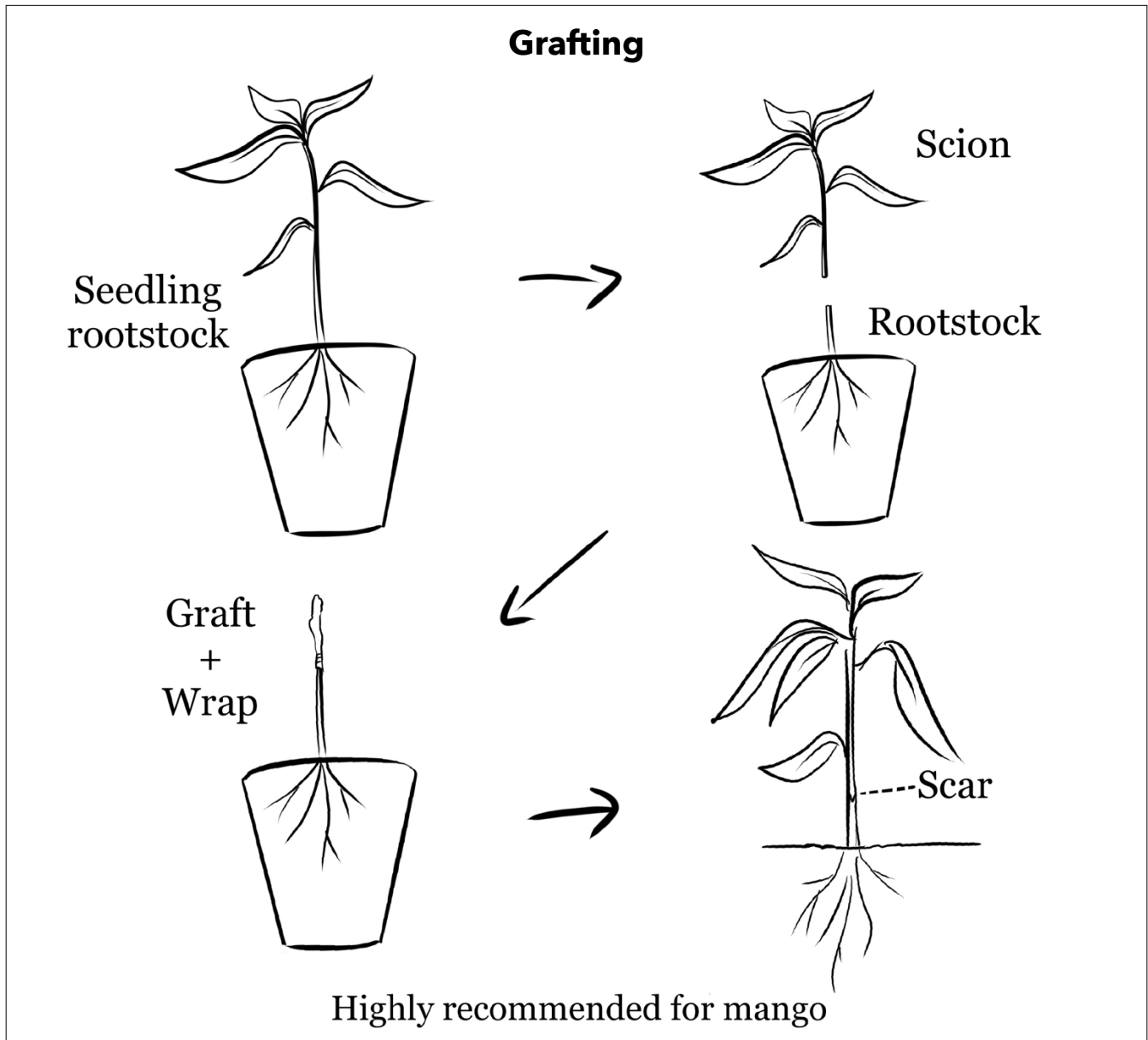


Figure 3

Grafting is highly recommended for propagating mango because it produces trees with very desirable characteristics, including strong root systems and large, sweet fruit.

This fact sheet was prepared for a mango grafting workshop held July 15, 2023, under the Beginning Farmer & Rancher Development Program at UOG, which was funded by the USDA National Institute of Food & Agriculture. Grant administrator: Adrian Ares, Reviewer: Jesse Bamba. Editor: Jackie Hanson. Layout: Conrad Calma. Illustrator: Sumahi Bevacqua.

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