

Propagating Hardwood Fig Cuttings

Introduction

Figs are easily propagated by cuttings, air layering, or grafting. They can also be propagated by growing from seeds; however this is usually not the preferred method because seedlings can vary significantly from the parent variety. Tissue cultures can also be used for figs but this is a method not accessible to most growers. Propagating by separating a sucker with attached roots from the parent and directly planting in a well-drained soil can be done successfully. The most common method used is to take hardwood cuttings from a mature tree with desirable characteristics and plant them after roots have been developed. A description of the common practice of "rooting-in-a-bag" is given in detail as very predictable results can be obtained when this method is employed.

Rooting Method

Hardwood fig cuttings are best harvested in the fall or winter when growth has slowed or winter dormancy has begun. Cuttings are typically cut into lengths of 6 to 8 inches from wood 1/2 to 1 inch diameter. The cutting should be in good physical condition free of cuts, scrapes and dents. The cuts are made square just past a node on both ends. Any remaining leaves or figs are cut-away and the cuttings are cleaned to remove organic debris.

Cleaning is done in a two step process. First, the cuttings are washed with a mild soap and scrubbed mechanically with a small brush. After rinsing with clean water, the cuttings are then cleaned with a sanitizing agent. Commonly, a diluted household bleach solution is used made from 10% bleach and 90% water. The bleach solution is used to again scrub the cuttings with a brush and a short soaking for 5-10 minutes afterwards. After rinsing again with water, the cuttings are allowed to air-dry on a clean surface. It is important to thoroughly clean and sanitize the cuttings before beginning the rooting process. All debris, organic matter and mold or fungus must be removed. Particular attention should be paid to cleaning around the nodes and buds which are areas where later mold and fungus growth can start.

The cleaned cuttings are now wrapped individually, or as a bundle, with damp newspaper and sealed in a plastic bag. Newspaper or paper towels can be used for wrapping the cuttings but newspaper has less likelihood of causing later mold development. Sheets of newspaper are doubled and cut to the length of the cutting and wet. The paper should be squeezed out so that it is damp but not dripping with water. The clean cutting is laid on the paper and rolled up leaving the ends exposed (Figure 1). The exposed ends are required to aid in the formation of

a callus that is integral to the rooting process. The wrapped cuttings are placed into a freezer grade zipper type bag and sealed with a small amount of air.



Figure 1. Cuttings wrapped in damp newspaper for rooting.

The bagged cuttings should be kept in a warm location at 65-75 degrees F out of direct sun. Rooting progress should be checked every 2-3 days at which time the cuttings are unwrapped and examined for adequate moisture, any mold development or the emergence of roots. The opening of the bags and exposure to fresh air during these examinations is beneficial to the rooting process and the control of mold development. Controlling mold during this phase of the rooting process is important as unchecked mold or fungus growth will damage the cutting and likely result in having to discard it before rooting can be successful. Several methods of mold control can be used if found on the rooting cuttings (Miller, 2009a).

The rooting process typically takes from 2-4 weeks but can last as long as 8 weeks or more for particularly difficult to root fig varieties. When roots begin to form on the cuttings, small white bumps known as root initials will be visible. These initials will develop into roots shortly after appearing. When the roots have reached a length of 1/4 – 1/2 inch, it is time to transfer the cutting into a "rooting media" to allow the roots to develop further before final planting into a 1-gallon container (Figure 2). It is common for leaves and buds to form on the cutting while in the rooting bags. In some cases leaves will form first, and in others roots will form first.

The cutting and rooting media are typically placed in clear plastic cups to monitor root development. Drainage holes are made in the bottom of the cups to allow excess water to drain away. Cups should be of sufficient size (e.g. 24 ounces) to provide an adequate volume of media for root development (Miller, 2009b). The rooting media used should be coarse enough for good drainage and air penetration. A mix of vermiculite and perlite can

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be successfully used as can a coarse well-draining soil mix. It is important that the mix provides moisture and air to the developing roots. Excessive moisture at this stage can cause root rot and failure of the cutting.



Figure 2. Newly emerged roots.

The cuttings in the rooting media and cups should be kept in a warm humid environment while leaf and root development progresses. Temperature should be kept 65 – 75 degrees F and relative humidity 75 – 95 RH. These conditions are easily maintained using a makeshift “nursery” created by a large storage tub with a lid kept partially open for fresh air.

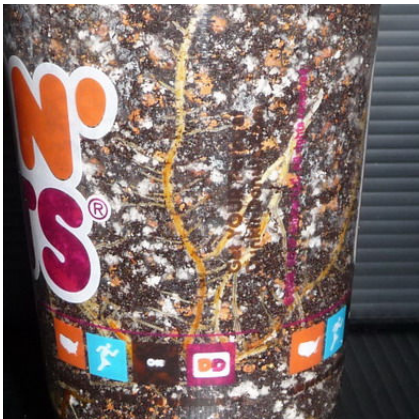


Figure 3. Root branching in a cutting ready for potting.

Periodically, the cuttings kept in the nursery should be examined for root development. Leaf development is important; however it is the maturity of the roots that determines when to transplant the cutting. The condition of the roots should be monitored closely. Roots should be white or translucent; development of a brown color is an indication of the onset of root rot generally caused by excessive moisture. When roots have sufficiently developed, as indicated by root branching (Figure 3), the cuttings can be transplanted to 1-gallon containers and a well-draining loose soil mix.

After transplanting the cuttings, maintaining a humid environment continues to be important. If the nursery previously used is large enough, the potted cuttings can be returned to that controlled environment. Another technique that is used is to cover the plant with a “humidity dome” made from a plastic bag or plastic soda bottle. The humidity dome should be made such that it has vents to allow in fresh air but closed enough to keep the humidity high. Over time, the use of the dome can be eliminated when the cutting is producing new growth. At this time, the plant can be slowly introduced to sunlight to foster the plants ability to produce energy via photosynthesis.

Summation

Figs are easily propagated by several methods, the most common being rooting by hardwood cuttings. The process for doing this successfully is simple and yields repeatable results. There are many variations to the rooting methods and here the basic “rooting-in-a-bag” method has been described. The important principles that are employed are to maintain cutting cleanliness, provide humidity/moisture during the pre-emergent rooting stage, controlling moisture and air to the developing roots after emergence, maintaining a humid environment after transplanting, and the slow introduction into sunlight. If variations to the process maintain these principles, then successful results can be achieved.

References:

- Miller, 2009a. ***Fig Rooting Experiment***. Self published.
Miller, 2009b. ***Fig Cutting Media Study***. Self published.