# Grower 101:
# Bare Root Perennials

Looking to get into bare root perennials? We spoke with Walters Gardens and tapped its *Simple, Sensible, Solutions. A Guide to Growing and Merchandising Perennials* to put you in the know.

**By Neda Simeonova**

Bare root perennials are dormant plants with the soil removed from the roots. They are typically field grown for a period of time, usually one year, and harvested. Once the plants are dug, the tops are trimmed down to approximately 1 inch from the crown with the exception of evergreen perennials such as iberis, lavender, dianthus, *Phlox subulata* and yucca. These bare root plants are then shipped to finish growers or end users.

## ROOT SYSTEMS AND PLANT GRADES

Bare root perennials display four different types of root systems. Fibrous roots are composed of profusely branched roots with many side rootlets. Taproot is the main descending root of a plant. Taproot perennials prefer cool temperatures and dry soil conditions once planted in containers. If temperatures are too warm, they put their energy into top growth and don't establish a satisfactory root system. A Fibrous root system often has no main or taproot development and, as a result, can be divided for a greater return on investment. A rhizome root system is a specialized slender or swollen stem with branching close to the soil surface. This type of root system produces roots, stems, leaves and flowers along its length and apex. The fourth type of root system is the Crom, an underground, bulb-like portion of the stem of a plant that consists of fleshy tissues.

Bare root perennials are available in different grades. Each grade is representative of the number of branches / blooms per plant and the finish size of the plant. Plants such as astilbe are graded by the number of "eyes" per plant. Plants with 1-2 eye divisions are suitable for 2-quart to 1-gal. containers. A 2-3 eye division is suitable for a 1-gal. container. Plants such as hemerocallis are graded by the number of "fans" per division. A 1-2 fan division is a "heavy" plant grade with high blooming potential.

*Top: Hosta bare root; Left and right: Hemerocallis bare roots. (Photos courtesy of Walters Gardens)*

## ORDERING AND RECEIVING

When ordering bare root plants it is important to keep in mind that they require prompt planting upon arrival. For spring greenhouse production, schedule your order to allow 6-8 weeks of growing time in a cool greenhouse 48-55º F. If grown outdoors, arrival should be scheduled when weather conditions are suitable for transplanting. Outside plants should be kept above freezing and protected from excess rain. Most bare roots plants, with few exceptions, should be kept on the dry side until they break dormancy.

Once your plants arrive, you should transplant all roots within 1-2 days of arrival and make sure you label them for correct identification. Because some varieties are stored in freezers, if you find that some roots are still frozen, thaw them slowly in a cool room before handling. If you find that your plants are dry, soak the roots in water for one hour before planting. Soaking will help establish plants faster. However, if you cannot transplant immediately, store plants in loosely closed plastic bags in a cool area 35-40º F for no longer than 2-3 days.

Upon arrival, you can check the condition of your bare root perennials by inspecting their appearance. Roots should be firm, relatively dry and light brown in color. Since most plants have been packed in advance for cold storage, appearance of light surface mold is not unusual. This is caused by the high humidity necessary in cold storage and is not harmful to the plants. It is not necessary to do any preventative fungicide treatment; surface mold will disappear quickly if you provide good air circulation.

Some perennials require priority treatment after arrival. Evergreen plants can desiccate more quickly if left exposed, therefore begin transplanting your evergreen plants first. Once these are potted, proceed to containerize other bare root plants, and finish with the items in pots.

## PLANTING AND GROWING

When planting, most perennials should be potted with their crown approximately 1-inch below the soil surface. Sometimes, plants benefit from fanning or spreading their roots when transplanting. This will encourage new root growth. If the roots are too long, they can be trimmed. (Contact your supplier for correct techniques on trimming.)

Walters Gardens suggests using a commercial, bark-based, soil-less mix. For perennials, look for a media with total porosity of 50-60 percent, which maintains 20- to 25-percent porosity after irrigation. It is important to establish a balance between water-holding capacity and aeration for optimum plant growth. The media pH should be between 5.5 and 6.2, and the pH of the irrigation water should be 5.4-7.0.

Once roots are planted, water thoroughly as this helps to eliminate air pockets. Low soil temperatures that keep the plants too cool and wet for a prolonged period of time should be avoided. Morning watering is best for perennials because it gives the foliage a chance to dry out before the evening hours; this will help reduce diseases. The growing surface you select should have good drainage.



Temperature is a key factor when growing bare root perennials. For spring planting, keep all plants above freezing. Cold and wet conditions may cause plants to decline or rot. For best results, keep plants at 48-55º F for 10-14 days after potting to promote root growth, and then grow at 55-60º F until finished. Another important factor is light. Most perennial varieties should be in full sun, although there are some shade-loving plants.

When fertilizing, to prevent salt build-ups, avoid using any slow-release fertilizers in the soil mix until it starts getting warmer (around April 1st in the North), because very little fertilizer is released when it is cool and cloudy. (Follow the manufacturer's recommendations.) This could result in severe dieback or death if the plants are exposed to freezing conditions. In addition, newly planted perennials are not able to absorb fertilizers as they are establishing their feeder roots. Wait to fertilize until there is 4-6 inches of growth. For actively growing perennials, liquid fertilization is one option; however, growers have to ensure that appropriate levels of nutrients are maintained in the growing medium. A solution containing 100 ppm nitrogen from an NPK fertilizer, such as a 20-10-20, at every watering will be sufficient in most cases for 1-gal. containers.

As perennials mature, you might want to consider spacing plants to provide good air circulation. Some growers refer to this as "checkerboarding." Pruning is also very important, as it will keep your crop compact, encourage crown and root growth and allow water to penetrate more easily. Pinching and pruning perennials in their containers will not only keep plants attractive looking, but it will also encourage rebloom. GPN

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