Mickfield Hostas Newsletter

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This month we look at the various methods of hosta propagation

The explosive growth in the popularity of hostas has been fuelled by their availability, which is largely due to the increased use of micropropagation. This method of propagation has increased the number of plants available to the market at much reduced cost but is it the best way to accurately reproduce characteristics?

Root division

This is our preferred method of propagation, especially as it is almost 100% reliable from the perspective of the maintenance of plant characteristics and strength of the divided plantlets.

We divide our plants throughout the growing season because we need to fit it around our business commitments. However, we recommend spring as the best time because this is when plants are most vigorous and divided clumps will re-establish quickly. It is easier to see how to tackle the task when you are not fighting with masses of foliage. Wait for shoots to show well above the soil and either dig out a wedge and back fill the space with fresh soil, or lift and re-pot the whole plant. Since our plants are mainly pot grown, the latter option gives us the chance to remove any compacted or damaged roots and give plants a 'spa treatment' at the same time. This entails washing the roots in a solution of one part bleach to ten parts water, which kills any harmful organisms lurking in the root ball.

It is good practice to wash your tools in a weak bleach solution before and after dividing plants as a further precaution.

The side column shows how we routinely divide parent plants in our collection.

Bud cutting

Sometimes the root system is too matted and will not separate easily. We suggest taking a couple of garden forks used back-to-back to apply leverage to the root ball. If that fails, use a spade to cut through, the plant will recover so don't worry about a little damage. Alex Summers developed the method of bud cutting that we often use if the plant we are dividing has a reasonable growth rate. This involves removing bud eyes together with a portion of the adjacent root system, to create a viable plant. This is an ideal way to create quantities of small plantlets from a mature root ball and we often use this to divide parent plants to satisfy special requests and to augment our sales stock.

Ross method

A useful way of increasing slow growing hosta cultivars is the Ross Method. This involves clearing the soil from the crown of the plant to expose the root system and carefully cutting between dormant buds with the plant in situ. This encourages new shoots to develop, whilst avoiding disturbance of the roots, causing minimal trauma to the plant.

Obviously, the root division techniques we have outlined, do not produce many plantlets at one time. Dividing should not be undertaken too often as this could weaken the plant, resulting in uncharacteristic growth patterns. Our collection plants must be maintained as an accurate reference for the rest of our operation and for the purposes of Plant Heritage. Therefore, in order to satisfy demand we do buy in Tissue Cultured plants which we then grow on at our nursery for at least a season, often longer.

1. Remove from pot

2. Trim off compacted root

3. Shake off soil

4. Wash plant

Micropropagation or Tissue Culture

Tissue Culture is a form of division that takes place at the cellular level, enabling producers to propagate thousands of plants from a single hosta.
The meristem (where the crown meets the roots) is the most reliable part of the plant from which to extract the propagation tissue (explant), as these cells have the best rate of growth and regeneration and contain all the characteristics of the plant. The introduction of chemical elements to manipulate these cells determines the number of sets of chromosomes which will be present in the resulting plants. This is important for breeders looking to enhance certain plant traits, such as increased pest resistance, improved leaf texture and colouring. Tetraploids have four sets of chromosomes and are generally thought to be more garden worthy plants. The process of Tissue Culture is interesting in many ways, not least in it's ability to create wonderful new cultivars. Although the process sounds simple, it is quite complex, expensive and not always successful. If a 'new' cultivar proves to be uneconomic to produce because of a high failure rate, it can very quickly disappear from the market.
Over time we have identified a couple of potential drawbacks to plants produced by Tissue Culture.

1. Reversions

In our experience some modern cultivars do not remain stable. Initially they develop their desired characteristics, only to revert at a later date. Two examples are ***h.* 'Allegan Fog'** and ***h.* 'Spilt Milk'**. Because of their tendency to revert, we do not send these varieties out while they are dormant, so that we can be sure they are true to type when they leave the nursery. Of course, we cannot guarantee that they won't revert at some stage. If this does happen it is possible to cut away the reversion and if it is beautiful in it's own right, plant it elsewhere. Not all reversions are 'duds'. For many collectors it is their unpredictable nature that makes them desirable.

2. Erratic growth

Some cultivars do seem to have unpredictable growth rates, growing wonderfully at first, only to slow down or seemingly go backwards for no particular reason. Some cultivars seem to grow beyond their expected dimensions within the first year of growth in soil. It is almost as if they are experiencing the raging hormones teenagers suffer from. For this reason, we sometimes hold back a new cultivar for a year or so before putting it out for sale, so that we can ensure they will ultimately settle down.
Some varieties grow well for 4-5 years then suffer a mid-life crisis. ***H.* 'Fire and Ice'** seems to do this, but a **spa treatment**) works wonders, usually giving several more years of joy in the garden.

Overall, we are pleased with the results of Tissue Culture propagation and we will continue to monitor all our plants to try to understand more about the pros and cons of the different methods of producing new plants so that we can advise our customers accordingly.

PSST... Growing hostas from seed

Hostas do not reproduce characteristically from seed. The only exception to this rule is ***h. ventricosa***. This species naturally produces clone seeds. Apomictic plants reproduce asexually, by passing both meiosis and egg cell fertilization to produce genetic replicas of the original plant. Generally, hostas grown from seed will be unremarkable by modern day standards. We have become accustomed to ever more stunning colours and variegations becoming available year-on-year.

Next month: We give you a sneak preview of what we will have for sale in 2010

5. Separate root ball and cut out any damaged or rotted root material

6. Trim off excess root

7. Create a domed area of soil on which to place the plant. Firm down the soil before back-filling pot

8. Don't forget to label!

The advice and opinions contained within this monthly newsletter have been formed over more than 30 years of experience with the Hosta genus. We are constantly learning and refining that knowledge and would welcome any suggestions that readers of this newsletter would like to make so please contact us.