

DO'S AND DON'TS OF PERENNIAL DIVISION

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Division is an excellent method of vegetatively reproducing plants if done at the proper time of year. Timing is critical to achieve optimal reproduction rate. Fall, winter, and early spring are the best times to propagate plants. As plants come out of dormancy, they tend to have the greatest ability to reproduce fresh and healthy roots. It is not always necessary to deal with a dormant plant. Some plants such as *Hemerocallis*, *Hosta*, and *Astilbe* can be divided at any time of year. Plants at least two years old give you the best multiplication rate, but one year plants work as well.

Critical to propagation success is having a dedicated stock bed. This area can be either in the field or in containers, however, field growing tends to give better production rates than containers. Alternatively, using potted plants as stock plants allows a grower to use about 1/16 the space required for stock beds. The plants are divided in a two-year rotational system with half propagated the first year and the balance divided in the second year. Each year a new two year stock bed should be planted. Soil with organic matter such as peat moss, leaf mold, cottonseed meal, and organic fertilizer produces the healthiest plants. Watering and pesticide applications should be timely. Two inch irrigation should take place over an eight to twelve hour period to be repeated every fifteen days. Weed control must be regularly maintained to reduce future cost and improve quality. In our experience, pre-emergent weed killers may have a detrimental effect on cuttings and the production of roots.

In field production, plants on six inch centers with rows twenty-four inches apart will give an excellent return. Keep in mind the data presented are for two year old plants. The first year every other plant is dug with the balance dug the following year. Plants can be dug in the fall, in late winter, or early spring. After digging, most of the soil should be removed and the plants packed in dry peat to prevent rooting of foliage crowns. Disease susceptible plants may need pre-fungicide dip. We store these plants in thirty gallon trash bags at 36 degrees with as little temperature variation as possible. The trash bags should not be completely sealed since a buildup of ethylene gas may occur. Stored in this manner these plants should be divided and potted as soon as possible since they tend to decline rapidly. Using division, we find that we have a quality saleable plant in a shorter period of time when compared to potting plugs.

During the winter months, plants may be potted and grown in greenhouses and some varieties even do well in overwintering houses. If grown in the greenhouse, plants can be saleable within four to eight weeks. In our climate (zone 6), *Hosta*, *Astilbe*, *Hemerocallis*, *Bergenia*, and *Epimedium* can be placed outside under protection after potting. *Coreopsis*, *Anemone*, *Pulmonaria*, *Sisyrinchium*, and

Stachys should be placed in an overwintering house or greenhouses at 34° minimum temperatures.

The following list of perennials with propagation rates are based on two year plants. Also included are the best propagation times. With better fertilizing and more organic matter, the production rates would increase in many species. Plants in containers can be divided year round. Experience has shown us that it is best to divide plants while they are dormant. Always cut back foliage to help get the plant established.

Plants such as *Coreopsis verticillata* and *Lysimachia clethroides* can be divided by pulling the clump apart into single stems. A two year old *Coreopsis verticillata* 'Moonbeam' plant can be multiplied into ninety divisions suitable for one quart and four quart containers. Fifty plants would yield about four thousand five hundred containers! *Lysimachia clethroides* will produce fifty divisions after two years. A knife is helpful when dividing *Tradescantia*, *Bergenia*, *Pulmonaria*, and *Astilbe*. A hatchet or meat cleaver can be useful on grasses and peonies.

Grasses divide and grow quickly when divided in mid and late winter. Clumps should be dug and shaken free of soil. Be careful not to allow the roots to dryout at any time. Using a hatchet, cleaver or knife, hundreds of divisions per clump can be made. One clump of *Festuca* 'Elijah's Blue' can yield up to one hundred plants. These divisions can then be stuck in cell trays for later potting. Larger divisions can be potted into four quart, six quart, or twelve quart containers and placed in a greenhouse with minimum heat.

Geraniums, anemones, and poppies should be divided during the fall, winter, or early spring. Before dividing, one-inch root cuttings can be made on the thicker roots. Place these cuttings in cells or cutting trays and cover with one quarter inch of soilless mix. These cuttings may then be potted during the months of April and May. After three roots have been cut, divide remaining stock plants with a sharp knife. The foliage should be trimmed and the potted plants set in a thirty-four degree minimum heat house.

Iris sibirica may be divided from fall through spring, however, they do best when dug in August through September just as they begin to produce new roots. Single fan or multiple fan divisions may be used. Siberian iris have a high rate of multiplication and a two year plant can be divided into twelve to thirty divisions. Care must be taken with these plants and also with *Iris tectorium* so that the roots don't dry out - even twenty minutes of drying may harm the plant.

For some perennials, two weeks after plants have broken dormancy in early spring, small shoots with roots can

be pulled off the main clumps. These root easily and quickly, and allow for a high rate of multiplication. There is a three week window before these small roots are burned off by warm soil temperatures in late spring. *Lysimachia clethroides*, *Saponaria officinalis* 'Rubra Plena', *Boltonia asteroides* 'Snowbank', *Physostegia virginiana*, and *Aster* all work well with this method of division, producing up to one hundred new plants per stock plant. These plants can produce marketable plants in four to six weeks.

Proper maintenance of the stock plant is a priority. Tools and equipment should be disinfected often with a solution of one part clorox to nine parts water. *Rhizoctonia* can easily spread while dividing plants. Stock beds and

containers should be on a fungicide preventative maintenance schedule. Even a ten percent loss in plants due to disease can add up to significant costs through an entire season. When an apparent high disease rate occurs, the plant should be tested for the pathogens responsible.

A high return can be achieved through properly maintained stock beds. By dividing at the right time of year, large numbers of plants can be effectively produced from small area stockbeds. With proper planning, an efficient production schedule can be met with success.

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DIVISION OF 1-2 YEAR FIELD GROWN STOCK PLANTS

Name of Plant	Multiplication Rate	Time of Year
<i>Achillea millefolium</i> 'Cerise Queen'	100	Early spring
<i>Achillea millefolium</i> 'Hoffnung'	65	Early spring
<i>Alchemilla vulgaris</i> (mollis)	35	Early spring
<i>Allium senescens</i> 'Glaucum'	50	Early spring
<i>Anemone japonica</i>	10	Fall or early spring
<i>Armeria pseudarmeria</i> 'Bee's Ruby'	50	Early spring
<i>Aster novae-belgii</i> 'Eyetide'	30	Spring
<i>Astilbe japonica</i> 'Koblenz'	14	Anytime
<i>Astilbe simplicifolia</i> 'Alba'	10	Anytime
<i>Astilbe simplicifolia</i> 'Dunkellachs'	8	Anytime
<i>Astilbe thunbergii</i> 'Betsy Cuperus'	12	Anytime
<i>Astilbe thunbergii</i> 'Straussenfeder'	15	Anytime
<i>Athyrium nipponicum</i> 'Pictum'	25	Early spring
<i>Bergenia</i> 'Profusion'	25	Early spring
<i>Boltonia asteroides</i> 'Snowbank'	10	Early spring
<i>Carex buchananii</i>	20	Early spring
<i>Chrysanthemum maximum</i> 'Switzerland'	6	Early spring
<i>Chrysogonum virginianum</i> 'Mark Viette'	30	Early spring
<i>Coreopsis lanceolata</i> 'Rotkehlchen'	9	Early spring
<i>Coreopsis verticillata</i> 'Golden Showers'	60	Early spring
<i>Coreopsis verticillata</i> 'Moonbeam'	90	Early spring
<i>Coreopsis verticillata</i> 'Zagreb'	65	Early spring
<i>Dianthus</i> 'Tiny Rubies'	10	Early spring
<i>Filipendula digitata</i> 'Nana'	12	Early spring
<i>Filipendula ulmaria</i> 'Plena'	40	Early spring
<i>Filipendula vulgaris</i> 'Plena'	12	Early spring
<i>Filipendula ulmaria</i> 'Variegata'	22	Early spring
<i>Geranium</i> 'Johnson's Blue'	16	Early spring
<i>Geranium ibericum</i> 'Magnificum'	20	Early spring

Name of Plant	Multiplication Rate	Time of Year
<i>Geranium sanguineum</i> 'Elsbeth'	30	Early spring
<i>Hemerocallis</i>	3-9	Anytime
<i>Hemerocallis</i> , <i>Stella</i> types	12	Anytime
<i>Hibiscus moscheutos</i> 'Poinsettia'	3	Early spring
<i>Hosta</i> 'Blue Angel'	3	Anytime
<i>Hosta</i> 'Blue Cadet'	12	Anytime
<i>Hosta</i> 'Golden Tiara'	20	Anytime
<i>Hosta</i>	3-15+	Anytime
<i>Hosta fortunei</i> 'Francee'	6	Anytime
<i>Houttuynia cordata</i>	50	Early spring
<i>Iris ensata</i>	6	Early spring or August
<i>Iris germanica</i> 'Hybrids'	6	August
<i>Iris pseudacorus</i>	6	August
<i>Iris pumila</i>	12	Early spring or August
<i>Iris sibirica</i>	12+	August
<i>Kniphofia</i> 'Little Maid'	10	Early spring
<i>Liriope muscari</i> 'Christmas Tree'	6	Anytime
<i>Liriope muscari</i> 'Gold Banded'	6	Anytime
<i>Lysimachia clethroides</i>	50	Early spring
<i>Monarda didyma</i>	50	Early spring
<i>Miscanthus sinensis</i> 'Morning Light'	20	Early spring
<i>Oenothera fruticosa</i> 'Youngii-Lapsley'	25	Early spring
<i>Ophiopogon japonica</i> 'Gyoko Ryo'	20	Anytime
<i>Paeonia</i>	2-3	Fall
<i>Papaver orientale</i>	3-5+	August-October
<i>Pennisetum alopecuroides</i> 'Weserbergland'	25	Early spring
<i>Phlox paniculata</i> 'Mia Ruys'	15	Early spring
<i>Polygonatum humile</i>	6	Early spring
<i>Polygonatum odoratum</i> 'Variegatum'	6	Early spring
<i>Potentilla</i> 'Alba'	65	Early spring
<i>Potentilla</i> 'Tonguei'	54	Early spring
<i>Potentilla atrosanguinea</i> 'Gibson's Scarlet'	36	Early spring
<i>Potentilla versicolor</i> 'Plena'	25	Early spring
<i>Pulmonaria saccharata</i> 'Sissinghurst White'	40	Early spring or summer
<i>Pulmonaria angustifolia</i> 'Blaues Meer'	28	Early spring or summer
<i>Pulmonaria angustifolia</i> 'Johnson's Blue'	30	Early spring or summer
<i>Pulmonaria angustifolia</i> 'Munstead Blue'	16	Early spring or summer
<i>Pulmonaria longifolia</i>	20	Early spring or summer
<i>Pulmonaria rubra</i>	30	Early spring or summer
<i>Pulmonaria saccharata</i> 'Pink Dawn'	11	Early spring or summer
<i>Rudbeckia fulgida</i> 'Goldsturm'	125	Early spring
<i>Rudbeckia</i> Hybrid 'Herbstonne'	12	Early spring

Name of Plant	Multiplication Rate	Time of Year
<i>Rudbeckia speciosa</i> (Newmanii)	50	Early spring
<i>Rudbeckia subtomentosa</i>	25	Early spring
<i>Sisyrinchium bermudianum</i>	50	Early spring
<i>Stachys lanata</i> 'Silver Carpet'	15	Early spring
<i>Stokesia laevis</i> 'Silver Moon'	15	Early spring
<i>Stokesia laevis</i> 'Wyoming'	28	Early spring
<i>Tradescantia andersoniana</i> 'Pauline'	40	Early spring
<i>Tradescantia andersoniana</i> 'James C. Weguelin'	50	Early spring
<i>Tradescantia andersoniana</i> 'Snow Cap'	57	Early spring
<i>Tradescantia andersoniana</i> 'Valor'	33	Early spring

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