COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF MARYLAND AT COLLEGE PARK
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FACT SHEET

Production of Yarrows as Cut Flowers

Fact Sheet 685

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Introduction

Yarrows, members of the aster family in the genus *Achillea,* are some of the easiest cut flowers to grow. They bloom from seed the first year and are very vigorous growers. Plants tolerate heat, cold, low soil fertility, and drought. Yarrows rebloom after cutting and can be used both fresh and dried. A wide variety of flower colors are available, including white, ivory, yellow, gold, coral, pink, red, lilac, and purple. There are close to 100 species of *Achillea,* but less than a dozen are cultivated as cut flowers.

The most common yarrows developed for use as cut flowers are derived from the following species: *A. clypeolata, A. filipendulina, A. millefolium, A. ptarmica,* and *A. taygetea.* These five species have been crossed with each other to produce cultivars with larger flowers, more attractive colors, and stronger stems.

Outstanding Hybrids

Achillea x 'Coronation Gold' (a cross between *A. filipendulina* and *A. clypeolata*) has been available for many years and is still considered one of the best yellow yarrows for fresh-cut and dried flowers. The plants are compact, producing dense, convex flower heads 3 to 4 inches across on strong, well-branched stems. The aromatic, fernlike foliage is gray-green. Renowned horticulturist Allan Armitage suggests purchasing 'Coronation Gold' as divisions, because seed sold as 'Coronation Gold' is often *A. filipendulina* or one of its cultivars.

Achillea x 'Moonshine', *A. clypeolata* x *A. taygetea,* has pale, flat, bright-yellow flower heads 2 to 3 inches across, with feathery silver-gray foliage. During hot summers, it is susceptible to foliar diseases and root rots and does not tolerate wet soil.

Achillea x 'Schwellenberg', *A. filipendulina* x *A. ptarmica,* was introduced to the United States in 1987 by Longwood Gardens and the National Arboretum. It has deep-gold flower heads on strong, well-branched stems and feathery silver foliage on a compact, upright plant.

The Galaxy hybrids, *A. millefolium* x *A. taygetea,* have a similar habit to *A. millefolium,* but with larger flower heads, better colors, and stronger stems. *Achillea* x 'Appleblossom', *A.* x 'Beacon', and *A.* x 'Salmon Beauty' are three of the Galaxy hybrids that do well in the mid-Atlantic region.

Outstanding Species and Cultivars

Common yarrow, *A. millefolium,* is a very vigorous grower and produces a dense mat that spreads rapidly. If spaced 2 feet apart, it will fill in

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a bed within 2 years. The white-to-pink flowers are produced in flat, 2- to 3-inch heads on 1- to 3-foot stalks. The stems tend to fall over in a typical hot, humid Maryland summer and thus need support. Seed from *A. millefolium* cultivars produces a wide range of flower colors; however, not all of them are useful for cut flowers. If color uniformity is essential, you may prefer to buy vegetatively propagated plants from a good source and increase them by division rather than growing them from seed. Some of the many cultivars available as plants are 'Red Beauty', 'White Beauty', 'Lilac Beauty', 'Heidi' (pink) and 'Weser River Sandstone' (shades of salmon). *A. millefolium* cultivar 'Cerise Queen' and Galaxy hybrid 'Summer Pastels' are available as seed. 'Cerise Queen' is a vivid purple-red, while 'Summer Pastels' features a range of colors.

Fernleaf yarrow, *A. filipendulina,* and its cultivars all have feathery foliage and an upright habit. 'Parker's Variety', 'Gold Plate', and 'Cloth of Gold' produce attractive golden-yellow flowers up to 4 inches wide on strong stems. The stems are longer than *A.* x 'Coronation Gold', and foliage is green rather than gray-green. Fernleaf yarrow cultivars may require netting or staking in hot, humid weather.

Sneezeworts, *A. ptarmica,* are weedy-looking plants and have invasive rhizomes. The cultivars are used fresh as a substitute for babysbreath. It is normal for double-flowered cultivars to produce some single flowers. 'The Pearl' is available as both seed and plants; 'Angel's Breath', 'Globe', and 'Perry's White' are generally available only as plants.

Propagation

Yarrow species can be propagated from seed, divisions, or tip cuttings. Yarrow hybrids should be propagated by divisions or tip cuttings to preserve the intensity of the flower colors and maintain plant uniformity.

Seeding

Seeding can be done throughout the year. However, to have flowers within the first year, growers should sow the seed in a heated greenhouse in late February to early March. Approximately 1,000 seedlings are produced from one sixty-forth ounce of *Achillea* seed. Sow the seeds in plug trays or flats containing a mixture of equal portions of peat and vermiculite and barely cover them with clean sand or vermiculite. Water the trays or flats from the bottom, and place them under a mist system or cover them with plastic. Germination of *A. filipendulina* takes 7 to 14 days at 65 to 70 °F and 90 percent humidity. Germination of *Achillea* species is improved by exposure to light.

Transplanting

Transplant seedlings to large cell packs or 2- to 4-inch pots approximately 3 weeks after germination. Grow the transplants for another 2 to 3 weeks at 55 to 60 °F in full sunlight. Fertilize seedlings with 100 ppm nitrogen until plants are ready to be placed in the field. Do not fertilize the plants once they are in the production beds. Excessive fertility causes weak stems and poor flower quality. Place transplants in production beds in early May, approximately 8 to 10 weeks after seeding.

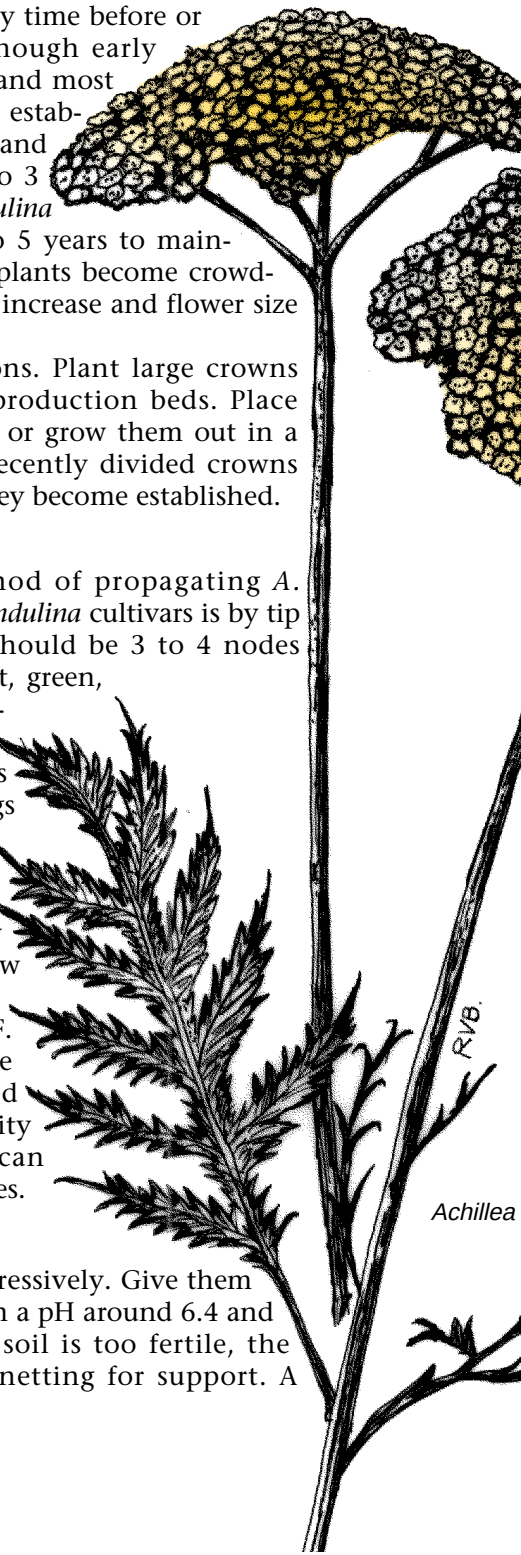
Division

Divide yarrows any time before or after flowering, although early spring is the easiest and most reliable time. Divide established *A. millefolium* and its hybrids every 2 to 3 years and *A. filipendulina* selections every 3 to 5 years to maintain plant vigor. As plants become crowded, disease problems increase and flower size and quality decrease.

Grade the divisions. Plant large crowns directly back into production beds. Place smaller ones in pots or grow them out in a nursery bed. Keep recently divided crowns well watered until they become established.

Tip Cutting

The fastest method of propagating *A. ptarmica* and *A. filipendulina* cultivars is by tip cuttings. Cuttings should be 3 to 4 nodes long. Always use soft, green, or nonwoody cuttings. Strip off the bottom two leaves and stick the cuttings in a well-drained potting mix. Propagate tip cuttings from late spring to early summer, and grow them in the greenhouse at 50 to 60 °F. Temperatures above 60 °F cause stretched plants. High humidity in the greenhouse can promote foliar diseases.



Culture

Yarrows grow aggressively. Give them well-drained soil with a pH around 6.4 and low fertility. If the soil is too fertile, the plants will require netting for support. A

minimum of 8 hours of full sun is needed for flower production.

Rows in production beds can range from 1 to 3 feet apart. Close spacing produces a high yield per square foot, but a low yield per plant. In one experiment using *A.* x 'Coronation Gold', plants spaced at 1-foot intervals yielded 46 stems per plant and 46.5 stems per square foot, while plants spaced 2 feet apart yielded 74 stems per plant and 18.6 stems per square foot. In another experiment with *A.* x 'Coronation Gold', Armitage reported stem length increased over a 4-year period. In a comparison of the two species, *A. filipendulina* produced fewer but longer stems than *A.* x 'Coronation Gold'.

Photoperiod and Temperature

Achillea depends on plant maturity rather than photoperiod for flowering. Grow seedlings at 55 to 60 °F for optimum results. While cold temperatures are not necessary for flowering in plants with *A. filipendulina* in their parentage, yarrows seem to have more uniform growth and better vigor when grown in winter temperatures (below 40 °F) for about 4 weeks.

During the summer when the flower stalks are elongating, *A. millefolium* cultivars will produce strong stalks and intense flower color if night temperatures fall below 70 °F. If night temperatures are above 70 °F, carbohydrates do not accumulate in quantities sufficient to make the stems thick and sturdy.

Pests

Yarrows are relatively pest free. In wet springs and summers, the green peach aphid, *Myzus persicae,* and the melon aphid, *Aphis gossypii*, may cause problems on new growth.

Use biorational pesticides, such as horticultural oil or insecticidal soap, to suppress aphid populations. Biorational materials have a short residual effect and thus, minimal impact on beneficial insects and nontarget organisms. Because biorational pesticides have a relatively short residual effect, it is necessary to monitor the aphid population regularly and re-treat when necessary. Use the systemic insecticide acephate (Orthene™*) to control aphids when biorational pesticides are not effective. Orthene™ is translocated to leaf surfaces and green stems. Once Orthene™ has dried, it has minimal impact on beneficial insects.

filipendulina

Diseases

Most diseases of yarrows are prevented or controlled using cultural methods, such as removal of infected plant parts, improved aeration, crop rotation, and proper plant nutrition and spacing.

Diseases occasionally seen on yarrows include powdery mildew (*Erisyphe* spp.), *Rhizoctonia* stem rot, a variety of leaf spots, *Botrytis* (gray mold) , and *Pythium* (root rot). Rust is reported on the West Coast and in the Mountain States, but not on the East Coast.

Powdery mildew is identified by white powdery growth on upper and lower leaf surfaces. This disease does not kill the plant, but it may reduce flower quality. If powdery mildew appears, remove the infected plant parts. Horticultural oil sprays and insecticidal soap will suppress powdery mildew about as well as standard systemic fungicides.

Rhizoctonia stem rot can kill yarrow plants during hot humid weather. Hybrids with *A. taygetea* in their parentage, such as *A.* x 'Moonshine' and the Galaxy hybrids, are more susceptible to stem rot and other foliar diseases during hot, humid growing conditions. Remove diseased plant parts promptly to reduce further spread.

Botrytis and *Pythium* can cause root rot and blight on seedlings in the greenhouse. These diseases are promoted by wet conditions and can be prevented through good sanitation and ventilation. *Botrytis* can damage flowers and foliage outdoors during extended periods of wet weather. Remove blighted plant parts and old flowers from production beds to reduce further spread.

Several species of the root-knot nematode, *Meloidogyne* spp., can attack yarrows and cause stunting, decline, and reduction of flower yield. Heavy infestations can kill plants. Root-knot infection is recognized by the lumpy appearance of the roots. Always check roots carefully when dividing plants. Have soil tested for nematodes if areas in the field decline or if you notice lumps on roots. Chemical nematicides can be applied only to fallow ground as they are toxic to plants. Control of plant-parasitic nematodes must be done prior to planting.

Harvest

Harvest flowers when their pollen becomes visible. If flowers are cut before pollen is evident, vase life is dramatically reduced. Harvest in the morning after the dew has dried, but before the heat of the day. Remove faded flowers from production beds to prevent seed formation and *Botrytis* infection and to prolong flowering.

Fresh

If harvested at the right stage of development, fresh flowers of *A. filipendulina* and its hybrids last 7 to 12 days in water. *Achillea filipendulina* flowers tolerate up to 1 week of storage at 35 °F and 1 day of shipping with no decrease in vase life. Other yarrows should be sold locally with minimal storage and shipping. *Achillea ptarmica* cultivars last 5 to 8 days as fresh-cut flowers if they are harvested when the flowers are fully open. *Achillea millefolium* and its cultivars have a vase life of 3 to 4 days. Be sure to remove foliage that falls below the water line; otherwise, it will rot quickly and produce unpleasant sulfury odors.

Dried

Yarrows can be dried for sale as everlasting flowers. Do not harvest blooms until flowers are open and pollen is visible. If picked too early, yarrow flowers will shrivel. Hang flowers upside down to dry.

Summary

Here are some of the *Achillea* cultivars that are available as seed or plants:

Name	Color	Seed	Plant
***A. clypeolata x A. taygetea* hybrid**			
x 'Moonshine'	bright-yellow, silver-gray foliage	no	yes
***A. filipendulina* hybrids and cultivars**			
x 'Coronation Gold'	yellow-gold	no	yes
x 'Schwellenberg'	deep-gold, silver foliage	no	yes
'Cloth of Gold'	gold	yes	no
'Gold Plate'	yellow	no	yes
'Parker's Variety'	golden yellow	yes	yes
***A. millefolium* cultivars and Galaxy hybrids**			
'Cerise Queen'	vivid purple-red	yes*	no
'Heidi'	clear pink, yellow eye	no	yes
'Lilac Beauty'	lilac	no	yes
'Red Beauty'	purple-red	no	yes
'White Beauty'	white	no	yes
'Weser River Sandstone'	clear salmon, fade to buff	no	yes
Galaxy hybrids:			
x 'Appleblossom'	rosy lilac-pink	no	yes
x 'Beacon'	crimson-red, cream eye	no	yes
x 'Paprika'	ruby-red, yellow eye	no	yes
x 'Salmon Beauty'	shades of salmon-pink	no	yes
x 'Summer Pastels'	mixed pastels	yes*	no
***A. ptarmica* cultivars**			
'Angel's Breath'	white	no	yes
'Ballerina'	clear white	yes	yes
'Perry's White'	double white	yes	yes
'The Pearl'	white	yes*	yes

*Not all seedlings will be desirable as cut flowers. Select those with the best characteristics, and increase them by divisions.

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