

# ACHILLEA (YARROWS)



Modern society may appreciate the way yarrow appears in a vase, but older cultures valued it for medicinal and even magical purposes. Homer's hero Achilles distributed yarrow among his soldiers to stanch the blood from their wounds, which gave the plant its genus name, *Achillea*. Navajos regard it as a general panacea; the British call it allheal. Pioneers drank it to cure just about anything. It has also been used as an astringent, as an anti-inflammatory agent, and as a salve to heal cuts, burns and bruises. The dried root of one species, *Achillea ptarmica* (sneezewort), was once ground and used for snuff, which resulted in a runny nose.

Yarrow, a hardy perennial, typically has flattish clusters of yellow, white or reddish flowers. It has gray or green, finely divided leaves with a lingering, spicy fragrance. Yarrow varies in size, from the creeping, alpine variety used in rock gardens to the 4-foot-tall kind used in wild gardens, borders and cut flower arrangements. It thrives in well-drained garden soil and full sunlight. Once established, yarrow can survive drought and neglect.

*Achillea* consists of more than 100 species of perennial herbs found throughout Europe, North and West Asia, and North America. Only four or five species of this specialty cut flower crop are grown in the United States, though numerous cultivars have been produced through breeding and selection.

## Varieties to Grow

The primary question to answer while exploring which varieties to grow is: What do consumers want to buy? Some varieties of *achillea* have dual use as

fresh cuts and as dried flowers. Examples are listed below.

*Achillea ageratum* (Sweet Yarrow)—used for medicinal purposes but not considered useful as a cut flower.

*Achillea* x 'Coronation Gold'  
'Coronation Gold'—24-36"; smaller, deep yellow flowers; gray-green, fragrant foliage.

*Achillea clypeolata* x *taygeata*  
'Moonshine'—18-24"; sulfur-yellow flowers; silvery-green, fernlike foliage.

*Achillea filipendulina* cultivars:  
'Gold Plate'—24-60"; yellow flowers; large flower heads, which may limit their use.  
'Parker's Variety'—36"; wide, golden-yellow flowers.

*Achillea millefolium* cultivars:  
'Cerise Queen'—24"; cherry-red flowers.  
'Fire King'—18"; deep red flowers that fade with age and hot weather.  
'Heidi'—18"; dark violet flowers.  
'Kelwayi'—18-24"; dark red flowers.  
'Lavender Beauty'—18-24"; light lavender flowers.  
'Lilac Beauty'—18-24"; lilac flowers.  
'Paprika'—24"; red flowers with yellow centers.  
'Red and Gold'—24"; bright red flowers with gold centers.  
'Rose Beauty'—24"; pink flowers.  
'Summer Pastels'—24"; pastel color mix; best used fresh, tend to fade when dried.  
'Weserlandstein'—18-24"; light rose flowers.  
'White Beauty'—24"; creamy-white flowers.

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*Achillea millefolium* x *Achillea clypeolata* cultivars

(Galaxy Series):

‘Appleblossom’—36”; mauve flowers.

‘Beacon’—24-36”; red flowers.

‘Great Expectations’—24”; pale yellow flowers.

‘Salmon Beauty’—36”; salmon-peach flowers.

*Achillea ptarmica* (Sneezewort) cultivars:

‘Ballerina’—12-15” very short stems; clear white flowers.

‘The Pearl’—24”; profuse, white, double flowers; may be raised from seeds or cuttings.

*Achillea taygeata* cultivar:

‘Debutante’—24”; mix of ivory, cream to lemon yellow and gold, all shades of pink, rose, salmon, lilac, purple, red, scarlet, coral and orange flowers.

### Cultural Requirements

#### Watering

Overhead watering is not recommended. It may damage the flowers, cause spotting on the petals, splash soil onto the foliage and promote the spread of disease. Drip irrigation is recommended because it places the water on the ground where it is needed, not on the flowers or foliage.

The amount and frequency of water required will vary with the weather and maturity of the crop. Base the irrigation schedule on the soil moisture status in the root zone, and irrigate to provide sufficient but not excessive water to the crop. Insufficient water will reduce the production and quality of a crop, whereas a consistently saturated soil will reduce growth and

promote the development of root rot. In general, yarrows do better if kept moderately moist. Kansas growers should not attempt to produce specialty cut flowers without providing supplemental irrigation. The dollar value of the crop and demands of the market are such that it is foolish to attempt production under natural rainfall in Kansas.

#### Fertilization

Before initiating a fertilizer program, always test the soil for nutrient content. The increased water requirement of cut flowers creates an increased requirement for fertilization. The application of fertilizer should coincide with crop needs.

One to 1½ pounds of actual nitrogen per 1,000 square feet of production bed space applied in spring should be sufficient for the crop. Crops growing in sandy soils or in areas of heavy rainfall may require a second application in late June. Use calcium nitrate as a portion of the nitrogen requirement; the added calcium will aid in increasing stem strength. Apply phosphorus and potassium at the same time, if needed as determined by soil test.

If fertilizer is injected into drip lines, 150–200 ppm of nitrogen in a constant feed program is ideal. Again, depending on soil test results, a complete fertilizer may be used to supply phosphorus and potassium. Avoid an excess of phosphorus because micronutrient complications may begin to occur at excessive levels.

Avoid late-summer application of any fertilizer. Plant growth in September and October needs to decrease gradually toward dormancy to promote cold hardiness for winter survival.

### **Achillea (Yarrow) Cultural Requirements**

	‘Coronation Gold’	<i>A. millefolium</i>	<i>A. filipendulin</i>	<i>A. ptarmica</i>	<i>A. taygeata</i>
Germinates in 4-6 days.		x		x	
Germinates in 7-14 days.	x		x		x
Humid, warm conditions. Do not cover seed.	x	x	x	x	x
Divide when crowded.	x	x	x	x	x
Space 12-18” between rows, 12” within row.	x	x	x	x	x

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## Weed Control

Growers must control weeds in the field production of yarrow, as competition with weeds reduces the quantity and quality of floral production. A bed full of weeds also increases the time required to harvest, raising labor costs. Several options are available to combat weed growth: herbicides, barriers or mulches, and hoeing and hand-weeding.

Due to limited production of many species of specialty cut flowers, only a few herbicides are labeled for use. In 1993, DCPA (Dacthal), Fluazilop-P (Fusilade), Trifluralin (Treflan) and Fenoxaprop (Acclaim) are registered for use on *Achillea* spp. (yarrow). Not all chemicals are registered for use on all species. Contact your county Extension agent for an update on herbicides currently labeled for yarrow production.

Weed barriers and mulches prevent weed growth and restrict soil splash on foliage and flowers from rain and irrigation. The greatest benefits in weed control occur in the first growing season while yarrow plants are becoming established.

While hoeing and hand-weeding are excellent methods of control, availability and cost of labor may be prohibitive in all but the smallest production situations.

## Insect Control

Good cultural practices are the best insect control. A healthy, actively growing yarrow plant is more resilient to insect attack. The ideal approach is a preventive program. Control insects early, when they are first detected; do not wait until a serious infestation occurs. Less chemical can be applied to spots as they develop than would be required to spray the entire crop. Aphids, leaf hoppers, spider mites and thrips are the most common insects encountered.

## Disease Control

Foliar fungal diseases, including powdery mildew, downy mildew and rust, are the most serious diseases on yarrow. Powdery mildew is distinguished by white spots on both sides of the leaves. Downy mildew is distinguished by small yellow spots on the top of the leaves and white mold on the bottom. If mildew is a recurring problem, it might be wise to slightly increase the spacing between plants to improve air circulation around the foliage. Also, irrigating early in the day will lower the relative humidity in the microclimate around the crop before nightfall, which will help reduce the incidence of foliar fungal diseases.

Rust is characterized by raised spots called “pustules” found on the undersides of leaves and stems. The pustules usually appear reddish in color, but may range from bright yellow to black. If the case is severe, the pustules will become enlarged and grow together, destroying leaves and occasionally the entire plant. Remove and destroy rust-infected leaves. At the end of the season, cut infected plants to the ground, and remove all plant debris. Do not compost.

Another disease affecting yarrow is stem rot, caused by *Rhizoctinia solani* and resulting in decay of the stem base. Fungicides and crop rotation help to alleviate the problem. Allowing the soil to dry between watering will help to retard the development of soil pathogens.

## Yields

Higher plant density—closer spacing—results in significantly higher yields per square foot of production space. Research with *Achillea* x ‘Coronation Gold’ showed that a density of one plant per square foot yielded 46 stems per square foot, while a density of one plant per 2 square feet yielded 18 stems per square foot. The higher plant density beds had 45 percent more stems with a length of 20 inches or greater. In both yield and quality, closer spacing was better.

Yields will be low the first growing season; approximately 5 stems per square foot can be expected. Stems will be short—from 10-20 inches. Production in the second and third years will range from 40–50 stems per square foot, with about 70-85 percent of the stems longer than 20 inches (*Achillea* x ‘Coronation Gold’).

The high-density planting will require the beds to be dug and divided every 3-5 years. Stagger bed planting over a 3-year period, digging and dividing 1/3 of the plants each year. This will have a smoothing effect on production and sales. The low yields the first year after planting will be balanced by the high yields of plants left undivided and in production.

Divide the plants in September. Cut the tops off to ground level, dig up the root clump, and cut it into pieces containing 3-5 buds each. Plant the strongest pieces back into the production bed. Each clump can be expected to yield 4-5 new plants, so there is potential to increase the size of the production area.

Yields expressed here were produced under experienced care using drip irrigation with soluble fertilizer injected in the water. Soil type and weather conditions will affect the production level you achieve. The only thing consistent about the weather in Kansas is that it is always changing.

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## Harvest and Postharvest

As with most specialty cut flowers, little published information is available about harvest handling of fresh yarrow. This could mean that yarrow is among the many species that have not yet been examined, or more likely, that yarrow has no special harvest requirements and that standard harvest practices can be used effectively.

### Standard Fresh Cut Flower Harvest Requirements

- Harvest stems during the cool part of the day—morning or late in the day—when plants and flowers are free of dew and moisture.
- Harvest when all florets are fully open.
- Use clean, disinfected harvest containers and cutting utensils.
- Cut stems as long as possible, but leave enough nodes to ensure future production.
- Strip excess and damaged foliage from the stems in the field.
- Place newly harvested stems in commercial floral preservative or acidified—pH 3.5 citric acid works well—clean water.

### Postharvest Practices for All Yarrows

- Remove stems from the field as soon as possible to cold storage or to a cool, shady place until the flowers are ready to be graded and processed.
- Strip foliage from the portion of the stem that will be submerged because it decays easily and fouls the water.
- Grade by stem length, flower size and cultivar.
- Bunch by buyer's specifications, usually in tens or twenties.
- Harvest when all florets are fully open.
- Recut stems under water to a uniform length.
- Store graded and bunched stems in clean, disinfected containers in commercial floral preservative.
- Store at 32-36°F, with 85-90 percent relative humidity.
- Vase life at room temperatures is 2-7 days.

## Dried and Preserved Yarrow

Yarrow is used extensively as a dried material. Of all the yarrows, the yellow cultivars seem to retain color the best. Most whites turn a muddy beige, the colored pastels fade to an off-white and the reds can turn a blackish blue-red. The drying and preserving operation should not become an outlet for seconds and low-quality flowers, although undersized, otherwise perfect flowers are acceptable and may be desirable.

## Harvest Requirements

- Harvest as you would for fresh yarrow.
- Bunching and grading can be done in the field if the flowers are to be dried immediately.
- If plant material cannot be processed immediately for drying, handle it like fresh material until it can be processed properly.
- Strip the foliage from the bottom half of the stem, and bunch the flower heads together.
- Cut stems to the longest possible uniform length and secure with two rubber bands, one near the cut end and another farther up the stems.
- Hang the processed bunches in a dark room at 50°F or more with 50-60 percent relative humidity. Yarrow can also be dried upright in containers to prevent florets from closing.
- Put an inch or two of water in containers to prevent immediate wilting of the stems. As the water is taken up by the stems and evaporates, the stems will dry enough to support themselves, preventing a wilted appearance.
- Take care to position stems so they dry straight.

The foliage of *Achillea filipendulina*, fernleaf yarrow, is a useful dried material.

- Bunch in groups of five or handle individually.
- Do not strip the stems of healthy, undamaged foliage, but do remove damaged foliage.
- Hang to dry like the material harvested for flowers.

## Marketing

Identify and organize market strategies before investing in seed, plants or equipment. Knowing how and where to sell the product is crucial to the success of a business. Be flexible, and determine more than one outlet; have a backup plan. The goal is to create a successful, profitable and sustainable business, and although definitions of success and profitability may differ, sustainability is the same everywhere.

*Achillea* is marketed fresh and dried, and serves as a filler flower in design work. The foliage itself is unique in its airy, ferny appearance and is useful as an alternative to the standard foliage available.

### Fresh and Dried Market Outlets

Local, direct retail markets:  
farmers markets  
roadside markets  
restaurants  
caterers

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Local wholesale markets:  
florists  
roadside markets  
grocery stores  
flower brokers  
value-added entrepreneurs

Regional/national/international wholesale markets:  
cooperatives  
flower brokers

Fresh and dried materials are also marketed in value-added forms. Value-added activities are those in which the plant materials are processed in some way to create a new product perceived to be of higher value to the consumer. Processing may be as simple as making fresh or dried mixed bouquets for direct retail sales, or as complex as preserving with glycerine and dyeing materials that are then used in making decorative items such as wreathes, arrangements and swags.

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**Notes:**

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