

Cut flowers
for farm
production:

Paper Flower “Double Mixture”



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Cover photo: Stock photo of two paper flowers.



Paper flowers were not trellised in the LSU Trials but may benefit from some support as they tend to fall over in clumps when loaded with blooms.
Photo by Kathryn Fontenot

Introduction

The paper flower (*Xeranthemum annuum*) Double Mixture is a stunning annual plant appreciated for its vibrant and long-lasting flowers. This plant is aptly named because the petals have a paper feel. Paper flowers originate in Eastern Europe and the Mediterranean region. This particular species belongs to the Asteraceae family and is famed for its robustness and ability to grow in harsh conditions and poor soils. Historically, the paper flower, also known as immortelle, has been cultivated since the 16th century for its blossoms, which retain their color and shape even after drying. This led to the plant's symbolic association with eternity and remembrance. The primary purpose of growing paper flowers is for ornamental enjoyment. These flowers add a burst of color to gardens from late spring through the summer and are particularly valued for dried flower arrangements due to the longevity

of blooms. Its drought tolerance and undemanding nature make it a fantastic choice for novice cut flower producers and gardeners looking to brighten their outdoor spaces and floral arrangements with minimal effort.

Production

Paper flowers can be transplanted into Louisiana gardens in the spring after the danger of frost has passed. Seed is typically sown five to eight weeks prior to your desired planting date. When starting seed, ensure that the seed receives light to germinate. If broadcast sowing in trays, move the plants to individual cells two to four weeks after sowing. We recommend starting seed in 50-96 count trays. Harden off the seedlings before transplanting by placing them outdoors out of direct sunlight for three to seven days. A preplant application of a complete fertilizer is recommended. Fertilizer was

applied at a rate of 300 pounds of 13-13-13 per acre spring 2023 planting. Seedlings can be planted 12 inches apart in the spring. We planted in a single drill line down the center of the row, but based on overall plant size, a double drill planting on 12-inch centers can also be considered. Trellising was not required for this crop. However, we do recommend planting paper flowers in full sun with well-drained soil. Three to four weeks after transplanting, biweekly low dose applications of fertilizer such as calcium nitrate will boost growth, especially if

applied through drip irrigation. Soils vary throughout the state and therefore making exact fertilizer and irrigation recommendations is difficult. But we do recommend using drip irrigation. With emitters set no further apart than 12 inches. Drip irrigation maintains soil moisture and is not meant to take completely dry soil and replenish all water. Therefore, we recommend daily irrigation simply to maintain a moist but not saturated soil. Overhead irrigation is not recommended as it enhances disease probability especially in rainy years.

2023 LSU AGCENTER SPRING CUT FLOWER TRIAL DOUBLE MIXTURE PAPER FLOWER DATA

Characteristic	Measurement
Average Number of Stems per Plant on the First Harvest	4 stems
Average Stem Length	16.5 inches
Average Number of Flowers per Stem	13.5 flowers
Average Flower Width	2.55 cm

Data collected from five random plants per plot, four plots planted in a randomized complete design with 10 plants per plot, for a total of 20 plants collected for data analysis.



Paper flowers should be harvest after they start to show some color. Photos by Kathryn Fontenot



Use plastic mulch to prevent weeds from growing in between flowers. Photo by Kathryn Fontenot

Pests and diseases

The primary pests observed in the LSU AgCenter plots were snails and slugs. Iron phosphate bait products can attract snails and slugs with their smell. These products can be applied along the row middles and are most effective when applied in the evening. Avoid applying these baits before rain or early in the day. Other snail and slug baits contain the active ingredient metaldehyde. This active ingredient is known to be toxic to dogs, affecting their nervous system. Therefore, we do not recommend using baits with metaldehyde if you have dogs near your cut flower fields or if you operate you-pick fields and allow customers to bring animals.

A second insect pest in the spring-planted paper flower crop was the cucumber beetle (*Diabrotica undecimpunctata howardi*). We found the beetles chewing on the foliage. However, the damage incurred in the spring 2023 planting did not reach an economic threshold. Therefore, we chose not to spray the flowers since they do attract pollinators. Biological control methods can be employed if cucumber beetles become a problem. Kaur Gill et al., 2020, recommends deploying natural enemies such as tachinid flies, soldier beetles, and entomopathogenic nematodes. Cultural practices such as keeping cucurbit, beans and corn crops away from these flowers also help reduce populations. Organic control methods include using kaolin clay and spinosad products. Make sure not to spray spinosad when the plants are near or during bloom.

Harvest and post-harvest handling

Double Mixture paper flowers produce an abundant number of 1- to 1½-inch papery feeling blooms that range from pure white to violet to deep purple in color. The plants have attractive slender silvery-gray foliage and stems. In many cut flower bouquets the foliage is removed. But in the case of this specific variety, we would recommend leaving the foliage intact to add fullness to bouquets and to help support the flowers as the individual stems are rather slender. Double Mixture will add an airy element to bouquets. This variety is suitable for fresh and dried use. For fresh cut or dried, harvest Double Mixture paper flowers when they are fully opened and while color is still fresh and bright. During harvest, bring buckets of water with fresh flower food solution to store flowers between the field and cooler. Multiple trips during the harvest to a cooler or air-conditioned facility may be necessary to extend vase life. Cooler temperatures between 35-40 F are recommended to keep paper flowers fresh for as long as possible.

Design applications

Paper flowers are a great choice to dry because they are harvested with rather dry petals and retain their color well. To dry these flowers, group several stems together and tie them using cotton or nylon twine at the base of the stems. Hang the flowers upside down for a minimum of seven days in a room with good air circulation. Using a room dehumidifier may help if drying large batches of flowers in an area with high humidity and poor air circulation. Limiting exposure to sunlight will also help preserve the flower color.

The royal purple blooms in the Double Mixture cultivar pair nicely in a bouquet with the bright yellow blossoms of Sunny Ball feverfew. This purple and gold color scheme is sure to please an LSU fan. To form the arrangement:

1. Remove all foliage that is browning or will be under water in the vase.
2. Separate the paper flower and feverfew stems at the bottom, removing any individual flowers that are too short for the arrangement.
3. Cut the bottoms of all stems at an angle and place them in a vase alternating between feverfew and paper flower to form a gorgeous mix of the colors.
4. Add foliage as desired for extra color and texture. In the bouquet pictured, pittosporum foliage was added for its rich medium-green color.
5. Adding flower food solutions to the vase will help retain a clear water and extend vase life for fresh bouquets but is not mandatory.
6. Change the vase water regularly to promote longer vase life for your bouquet. At each change, cut a quarter inch off the bottom of the stems to promote better water uptake.



Photo by Allison Huddleston



Paper flower and feverfew bouquet. Photo by Allison Huddleston

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Special thanks to Johnny's Selected Seeds for donating the seed for this cut flower trial.



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