



Mammoth™ 'Red Daisy'



# Garden & Landscape

The University's success in developing hardy azaleas and large cushion chrysanthemums of every hue is unparalleled. Now, new shrub roses, gaura, and ornamental grasses promise varied color and texture—and easy maintenance—for years to come. Trees and shrubs for northern landscapes are bred for blossom display, plant size, and early fall color, in addition to proven hardiness.

## Chrysanthemums

The University's mum breeding program is one of the oldest public sector breeding programs in the world and the only one in North America. Trend-setting breeding endeavors, coupled with its germplasm base and genetic resources, continue to bring a wide range of colors and shapes of proven hardy mums to northern gardens.

Beginning in the 1920s, U of M researchers were selecting and breeding mums for early flowering; there were none that bloomed before Minnesota's killing frosts.

The cushion habit of mums, a genetic

discovery of Experiment Station mum breeders, was the basis for the U of M's

first plant patent, in 1977 for 'Minngopher.' Plants are dome-shaped, with flowers almost completely covering the outside surfaces of each plant. Previous mums bloomed only at the top of long stems (upright habit). Within a decade, the cushion type became the dominant chrysanthemum plant habit worldwide.

In 1990, breeders inspecting field plantings (pictured above) found seedlings of unprecedented size. Now marketed worldwide as "Mammoth™" mums, the plants produce several thousand flowers and grow to

three to four feet across in the second season and thereafter.

The University's floral research garners international respect and collaboration. Scientists collected wild mum species in western China, near Tibet, to add to the germplasm collection. And, scientists from Asia study here and bring new breeding techniques back to the place where many of our exotics originated.

Even more colors and shapes are on the way. "Wave" types, which spread up to three feet across and remain low to the ground, and are also ideal for hanging baskets, will soon be released in a range of colors with daisy or double blossoms.



Mammoth™ 'Dark Pink Daisy'



Mammoth™ 'Lavender Daisy'



Mammoth™ 'Dark Bronze Daisy'

1926-1939: Breeding and release of greenhouse mums

1939: 'Duluth' — the 1st winter-hardy mum released

1977: 1st U of M plant patent for 'Minngopher' cushion mum

1990s: Extraordinarily large cushion mums lead to 'Mammoth' series

# Chrysanthemums

Tests show that garden mums survive the winter better when the above-ground dead plant stems are not removed in the fall. This is also a beneficial technique to use with other herbaceous perennials.



*Cushion growth habit*



*Upright growth habit*



*Shrub/Cushion growth habit*



*Wave growth habit*

CULTIVAR	YEAR	GROWTH HABIT	FLOWER COLOR, SIZE, TYPE	BLOOM PERIOD
Inca™	1996	cushion	Light bronze, 2" double button.	early
Lemonsota	1988	low cushion	Lemon yellow, 1" pompon.	early
Minnogopher	1977	cushion	Ruby-red 2-2 1/2" decorative.	early
Minnqueen	1979	cushion	Rose-pink 3" decorative.	early
Minnrose	1966	cushion	Rose-pink 1 1/2" pompon.	early
Minnruby	1974	cushion	Ruby-red 2 1/4" decorative.	early
Minnwhite	1968	cushion	White 2" decorative.	early
Minyellow	1972	cushion	Lemon-yellow 2" decorative.	early
Sesquicentennial Sun	2001	cushion	Gold, fully double 1-2" pompon. Frost-tolerant.	midseason
Snowsota	1989	cushion	White with cream centers, 1 1/2" pompon.	early
Burnt Copper	1988	tall upright	Orange bronze, 3" double pompon.	midseason
Centerpiece	1982	tall upright	Rose-lavender with gold center, 4" quill/spoon.	midseason
Gold Country	1983	upright	Peachy yellow, 4" fully double, incurved football.	midseason
Grape Glow	1988	upright	Bright rosy purple, 3 1/2" flat decorative.	midseason
Lindy	1974	tall upright	Lavender-pink, 4 1/2" quilled incurve.	midseason
Maroon Pride	1989	upright	Dark red, 3 1/2" flat, decorative.	early
Mellow Moon	1983	upright	Cream, 4 1/2" semi-incurved, fully double, football.	midseason
Peach Centerpiece	2000	tall upright	Peach colored with gold center, 2-4" flowers, quill/spoon.	midseason
Rose Blush	1993	upright	Mauve, 2-3" decorative.	early
Mammoth™ * Coral Daisy	2002	shrub cushion	Coral with a gold center, single. Frost tolerant.	early
Mammoth™ * Dark Bronze Daisy	2006	shrub cushion	Bronze with a gold center, single. Frost tolerant.	early
Mammoth™ * Dark Pink Daisy	2006	shrub cushion	Deep pink, large sized daisies with a gold center, single. Frost tolerant.	early
Mammoth™ * Lavender Daisy	2006	shrub cushion	Lavender with a gold center, single. Frost tolerant.	early
Mammoth™ * Red Daisy	2007	shrub cushion	Red petals with a gold center, daisy. Frost tolerant.	early
Mammoth™ * Twilight Pink	2002	shrub cushion	Pink with a gold center and a purple eye, single daisy. Frost tolerant.	early
Mammoth™ * White Daisy	2002	shrub cushion	White, gold center, semi-double, daisy. Frost tolerant.	early
Mammoth™ * Yellow Quill	2002	shrub cushion	Yellow with a gold center, single daisy, quilled petals.	midseason
Snowscape	1996	semi-wave	White with purple tips, 3" semi-double flowers.	early

\* "Mammoth™" mums were previously marketed as "Maxi-Mums" and "My Favorite™".



*Mammoth™ 'Red Daisy'*



*'Snowscape'*



*Mammoth™ 'Coral Daisy'*



*'Gold Country'*



*Inca™*



*Mammoth™ 'White Daisy'*



*Mammoth™ 'Twilight Pink'*



*'Mellow Moon'*



*'Minnopher'*



*'Peach Centerpiece'*



*'Sesquicentennial Sun'*



*Mammoth™ 'Yellow Quill'*