

OUTDOOR HARDY CHRYSANTHEMUM VARIETY  
SURVEY - 1988BRIAN WHIPKER<sup>1</sup>

In the fall of 1988, a survey of chrysanthemum varieties and the cultural practices in use by commercial greenhouses was conducted by Purdue University. The survey was sent to 105 commercial greenhouse operations in Indiana with thirty-five firms responding. The results of the survey are listed below. Growers may find the information presented to be interesting as a comparison to their current production practices and varieties grown.

I. Growing Medium

Of the respondents, the majority were using a soilless mix (71%). The brand names used by growers included: Sunshine mix (17%), Pro-Mix (11%), Metro-Mix (11%), and Speedel and Baccto mixes (6% each).

Twenty-five percent of the growers included soil in their growing medium. The most popular type was a mixture of 1/3 each: soil, peat and perlite.

II. Fertilization Program

The number of producers using specific types of fertilizers are listed in Table 1. The most common fertilization program followed by growers utilized a water soluble fertilizer similar to Peters 20-10-20 (82%). The application rate used was between 200 ppm to 300 ppm, applied on a one to three day schedule. Some producers also noted that they curtailed their fertilization program in early to mid-August to deter excessive foliage growth.

A slow release fertilizer (Osmocote or Mag Amp) was used by 34% of the growers as an additional part of their fertilization program. A common rate was 1.5 teaspoons per 8" pot, applied as a single dose.

III. Insect Pests

The insect pests varied greatly between firms and the controls they used during 1988, with aphids and whiteflies being the most common

pests. The responses are summarized in Table 2.

IV. Cultivar Specific Insect Pests

Growers were also asked if any of their insect problems were cultivar specific. The overwhelming answer was no, but a few growers did report a few incidents (Table 3).

V. Fungicide Usage

Information was also collected on the use of fungicides, either as a drench or a foliar application. The results are reported in Table 4.

VI. Top Cultivars Grown

Growers were asked to list the three top performing cultivars that they grew in 1988, regardless of color. Debonair, Grenadine and Minngopher topped the list, with over a third of the growers rating them in the top three. The results are listed in Table 5.

VII. The Most Widely Grown Cultivars

Of the wide assortment of cultivars available from the two primary sources of cuttings, all the cultivars were grown, if not by more than a single greenhouse operation. Therefore, a complete listing will not be reported on the number of firms growing each of the cultivars. Instead, Table 6 contains only those cultivars that were grown by at least 10% of the respondents.

VIII. Comments About Specific Cultivars

In addition to stating which cultivars were grown, each grower had the opportunity to comment on any growth characteristic of each cultivar, either good or bad. The responses varied from grower to grower, possibly due to differences in growing conditions. An example of how opinions varied is Allure. A few growers cited it as a poor performing cultivar, while another grower thought it was a "good" plant. In the end, the comments are of value as to which problems you should be on the look out for. The comments are listed in Table 7.

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Table 1. Soluble Fertilizers Used by Growers.

Type of Fertilizer	Percentage of Growers
20-10-20	51%
20-20-20	11%
20-5-30	6%
15-16-17	6%
15-15-15	3%
15-10-30	3%
20-19-18	3%

Table 2. Insect Pests Reported on Chrysanthemums.

Insect Pest	Problem Frequency	Common Controls Used
Aphids	37%	Malathion, Orthene, Avid, Lannate
Whitefly	37%	Talstar, Lannate, Temik
Thrips	15%	Avid, Lannate, Orthene, Thiodan
Spider Mite	12%	Pentac, Avid
Grasshopper	12%	Pentac, No Control Used
Caterpillars	12%	Lannate, Sevin, Malathion, Hand
Leafhopper	9%	Lannate, PT 1200, Sevin
Japanese Beetle	6%	Orthene, PT 265
Leaf Miner	6%	Avid, Vydate
Fungus Gnats	3%	No Control Used

Table 3. Cultivar Specific Insect Pests.

Insect Pest	Number	Growers Reporting Problem		Cultivar
		Number	Percent	
Mites	2		6%	Purple Chariot
	1		3%	Sunning Morning
	1		3%	Satellite
	1		3%	Grenadine
Aphids	2		6%	Minn-Yellow
	2		6%	Minn-White
	1		3%	Flaming Sun
	1		3%	Pure Sugar
Leaf Miner	1		3%	Cloud Nine
	1		3%	Zonta
	1		3%	Allure
	1		3%	Ginger
Thrips	1		3%	Goldstrike

Table 4. Fungicides Used by the Growers Surveyed and Method of Application.

<u>Fungicide</u>	<u>Application Method</u>		<u>Growers Reporting</u>	
	<u>Drench</u>	<u>Foliar</u>	<u>Total</u>	<u>Percent</u>
Banrot	2	-	2	6%
Benlate (Benomyl)	12	7	19	54%
Captan	1	3	4	11%
Chipco	1	2	3	9%
Subdue	12	-	12	34%
Terraclor	3	-	3	9%
No Control Used	-	-	12	34%

Table 5. The Top Rated Chrysanthemum Cultivars: Listed by Color and the Number of Votes Received.

<u>Color: Bronze &amp; Red</u>		<u>Color: Yellow</u>		<u>Color: Pink/Lavender</u>	
Mingopher	11	Allure	3	Debonair	13
Bravo	8	Goldmine	3	Grenadine	13
Ginger	8	Target	3	Cameo	1
Minn Autumn	7	Legend	2	Stargazer	1
Viking	5	Yellow Jacket	2	Stardom	1
Ruby Mound	3	Yel. Cloud Nine	1	Loyalty	1
Red Remarkable	1	Gold Strike	1		
Zonta	1	Minn Yellow	1		
Flaming Sun	1	Freedom	1		
Triumph	1	Sunny Morning	1		
Maple Mound	1				
Buckeye	1				
Bandit	1				
Lipstick	1				
Autumn Glory	1				
				<u>Color: White</u>	
				Minn White	2
				White Stardom	1

Table 6. The Most Widely Grown Chrysanthemum Cultivars.

<u>Cultivar</u>	<u>Percent</u>	<u>Cultivar</u>	<u>Percent</u>	<u>Cultivar</u>	<u>Percent</u>
<i>WHITE</i>		<i>BRONZE and RED</i>		<i>PINK and LAVENDER</i>	
White Stardom	57%	Minngopher	71%	Debonair	77%
Encore	43	Bravo	63	Stargazer	43
Frolic	37	Ginger	60	Grenadine	37
Minnwhite	23	Viking	51	Adorn	29
Baby Tears	20	Minnautumn	40	Stardom	29
Illusion	20	Buckeye	31	Tinkerbelle	26
Ballerina	14	Mirage	31	Camelot	23
		Ruby Mound	26	Grandchild	20
<i>YELLOW</i>		Wolverine	26	Cameo	17
Allure	60%	Triump	20	Purple Chariot	11
Target	57	Zonta	14		
Legend	43	Bandit	11	<i>BUTTON MUMS</i>	
Yellow Jacket	31	Flaming Sun	11	Baby Tears	17%
Fortune	26	Matchmaker	11	Small Wonder	11
Gold Strike	17				
Maple Mound	14				
Minnyellow	11				
Yellow Scarlet	11				

Table 7. Grower Comments About Chrysanthemum Varieties.

<u>Variety (Comments)</u>	
Adorn (late, insect problems)	Frolic (yellow foliage, tall)
Aggie (brittle)	Gambler (uneven growth)
Allure (short, early, flowers did not hold up well, good plant)	Ginger (flowers turned yellow under black cloth)
Applo (not vigorous)	Goldmine (red foliage, early, short, uneven growth)
Baby Tears (leaf spot, good plant)	Goldstrike (heat delay, insect problems, aborted buds)
Ballerina (tall)	Grandchild (tall)
Bravo (short - but nice color, leaf discoloration, troublesome)	Grenadine (minor leaf spot, root rot)
Bronze Beauty (small plants, uneven flowering)	Her Majesty (uneven growth & flowering)
Buckeye (lanky, tall)	High Gleam (early, brittle)
Camelot (late, brittle, long stems)	Ironsides (spreads)
Cameo (trouble surviving heat)	Lancer (tall)
Celebrity (tall, good plant)	Legend (premature budding)
Chiffon (brittle)	Matchmaker (some uneven growth)
Daisy Pink (late)	Minnautumn (some early buds)
Daisy Rose (late)	Minngopher (slow growing, not well shaped, heat problems)
Debonair (nice color, early blooms, great plant, heat trouble)	Minnwhite (late blooming, uneven branching)
Encore (good, iron deficiency, root rot)	Minnyellow (nice plant, good size, vibrant color, slow growth)
Fireside Cushion (tall)	Patriot (late blooming)
First Down (septoria, spray sensitive)	Poncho (yellow foliage)
Flaming Sun (poor shape)	Powder River (some early blooms)
Fortune (fell apart, root rot, burning on foliage)	

Purple Chariot (good color, some  
uneven flowering)

Red Dandy (root rot)

Red Gallantry (short, late)

Red Sunset (leaf spot)

Revere (tall)

Ruby Gem (root rot)

Ruby Mound (tall, stringy)

Sea Urchin (some uneven flowering)

Small Wonder (tall, stringy)

Soft Whispers (looks good)

Snow Daisy (big flowers, soft plants)

Scarlet Sun (leaf spot, poor plants)

Stardom (leaf spot, heat sensitive)

Starfire (late)

Target (excellent plant, late, some  
buds aborted)

Tinkerbelle (tall, heat sensitive,  
some discolored foliage)

Trinket (good)

Unique (less vigor)

White Stardom (late, a real "dog",  
tall, uneven)

Yellow Scarlet (tall, too bushy)

Zonta (leaf spot)

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