

COMPANION PLANTS WITH FALL PANSIES

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Pansies are ideal winter annuals because of their multi-season performance: an attractive flower display in the fall, a healthy green appearance in winter, and a resurgence of flowers in early spring. Due to increasing pansy popularity, homeowners and landscapers now consider year round landscaping feasible in the Southeast. People are rethinking their approach to cool season gardening with new plant material or renewed interest in traditional cool season plants.



Fall pansy producers often grow other crops (garden chrysanthemums, dianthus, snapdragons, and dusty miller) to diversify fall production. Unlike pansies, the foliage and floral display of these plants can be

minimal or the plant may succumb to cold damage during the late fall and winter months.

A few members of the Brassicaceae family (**Table 1**, page 17) that show promise as pansy companion plants are described below. They have been in production and landscape trials at NCSU for 2 years. The use of mustards and kales in the landscape is an additional option in fall production. Several mustard cultivars, which have been traditionally used in oriental stir-fry dishes, and kales, which have been used as fodder for cattle, have outstanding foliar and cold hardiness traits that make them ideal "winter annuals". Other leafy vegetables like Swiss chard and lettuce can be used as bedding or container plants. Listed in **Table 1**, page 17 are specific characteristics and production recommendations for these potential companion plants to pansies. (For a detailed description of ornamental vegetable production techniques, see NCSU Horticulture Information Leaflet No. 508: Success with Ornamental Vegetables, at www.ces.ncsu.edu/depts/hort/floriculture).



'Red Bor' is a curly leaf kale that has potential as a pansy companion plant. A tall growth habit and outstanding ability to proliferate in the cold makes 'Red Bor' an excellent performer. 'Red Bor' also "colors up" 2 to 4 weeks earlier than any of the curly ornamental kale cultivars. Planted in a mass or used just as a specimen in the garden, the purplish-red foliage of 'Red Bor' will provide any dormant shrub or perennial garden with vibrant color.

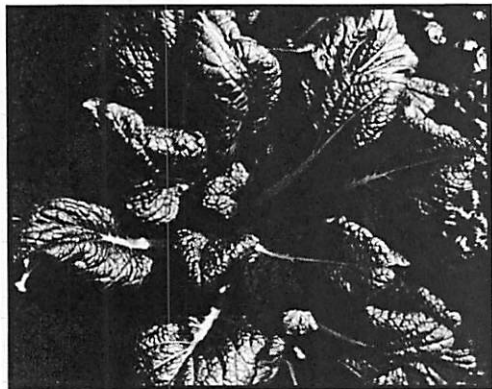


The kale cultivar 'Lacinato' (**Fig. 3**) or Italian kale is a unique plant with narrow strap-like leaves which possess a bumpy and crumpled texture. The blue-green foliage and white midribs of this tall kale are very attractive in the early winter, but as temperatures drop below 20°F, the outer foliage may develop necrosis due to cold damage.

The production of these kale cultivars is relatively simple. Because coloration occurs much earlier than ornamental kale, plants can be marketed 8 weeks after sowing. Ornamental cabbage and kale usually begin to color 10 to 12 weeks after sowing and exposure to temperatures 55°F or lower. Fertilize the kale on a continual basis until sales with a soluble fertilizer (150 to 200 ppm N) that has a high percentage (>70%) of nitrate-nitrogen. *If growers apply pesticides (plant growth regulators (PGRs), insecticides, or fungicides), then consumers need to be advised not to eat the treated plants. Also wholesale growers need to provide retailers with a history of pesticides applied to the crop.* Two foliar sprays of B-Nine at 2,500 ppm are recommended for height control.



'Red Russian' is a tall growing, cold tolerant kale, which has silvery blue-green colored foliage with wavy leaf margins and reddish-pink colored stems and midribs. An interesting characteristic about this kale cultivar is its late bolting response, which still makes it attractive in early spring when accompanied by flowering bulbs and pansies. 'Red Russian' develops a mild reddish tinge on the foliage when temperatures drop below 45°F.

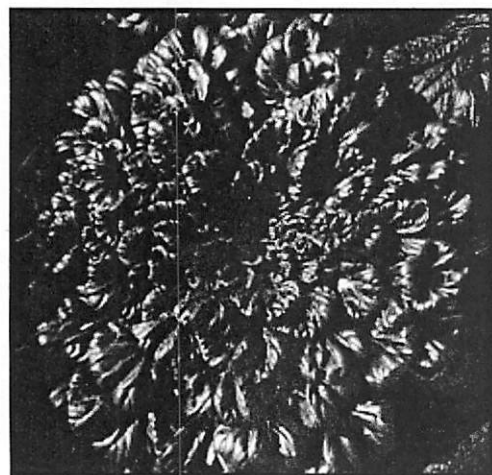


The **'Giant Red'** mustard or **'Red Giant'** has been one of the most popular ornamental vegetables used by landscapers in the Southeast. This vigorous growing plant has white midribs with bronze foliage. The plant does well in protected areas away from winter winds. As temperatures increase in the spring, the fleshy leaves expand rapidly, making the plant attractive with spring pansies and bulbs. 'Red Giant' grown in mass has a striking display, and when used as a specimen, this sprawling plant represents a focal point in the winter garden.

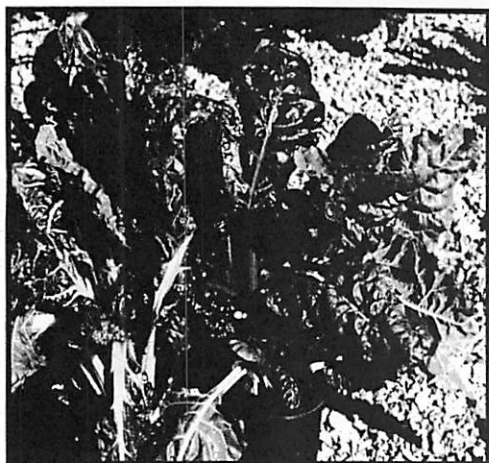


The potherb mustard **'Mizuna'** or **'Early Mizuna'** is a finely textured plant with bright green leaves arising from a fleshy tan crown. 'Mizuna's' mounded growth habit make it an excellent plant to used in masses or as a specimen plant. Early fall is the optimal planting time for 'Mizuna' due to dieback from freezing temperatures.

Mustards can be produced quickly with a constant liquid fertility program of 200 ppm N. The substrate should be moist at all times because mustards can quickly dry out due to fibrous root systems. As with kale production, growers should communicate with the public if pesticides were applied. The height of the above mentioned mustard cultivars were effectively controlled with Sumagic rates between 6 and 12 ppm, or B-Nine at 2500 ppm sprayed twice or a single application at 5,000 ppm.



Flat Pak-Choi or **'Tatsoi'** makes an excellent border plant in pansy displays. 'Tatsoi' may reach 6 to 8 inches in height, and with its flat, dark green foliage, the plant in mass creates a dense mat. Because 'Tatsoi' has a low growth habit, growers should not apply PGRs. If growers desire to have more pronounced white petioles, nitrogen rates of 125 to 150 ppm are recommended.



The All America Selections winner 'Bright Lights' Swiss chard is not only a plant ideal for the cool season garden, but it also performs well during the heat of the summer. This widely used cultivar has red, purplish-red, yellow, or white petioles and stems and robust foliage with crumpled leaves. 'Ruby Red' or Rhubarb chard is very similar to 'Bright Lights' in terms of growth habit, but only expresses red or purplish-red stems. Both cultivars do well in containers and can survive low temperatures.

Growers should plant 2 to 3 plugs per gallon pot or mum pan to achieve multiple colored clumps of Swiss chard. Seeds can be direct sown in cell packs and fertility levels should remain at 200 ppm N until sale. The application of B-Nine to 'Bright Lights' Swiss chard resulted in only minimal height control. Additional research is needed to determine an effective rate of B-Nine or the investigation of other chemicals.

For addition information about ornamental cabbage and kale, see NCSU Horticulture Information Leaflet No. 507: Success with Ornamental Cabbage and Kale, www.ces.ncsu.edu/depts/hort/floriculture. Listed in **Table 2** are six out of the 26 ornamental cabbage and kale cultivars that performed exceptionally well in the landscape during the fall of 1998 and 1999 at the NCSU Trial Gardens.

Table 1. Suggested ornamental vegetable cultivars and seed sources.

Crop	Cultivar	Common Name	Seed Source*
Kale	'Red Bor F1'	Red Bor Kale	S
	'Red Russian'	Ragged Jack	J, S
	'Lacinato'	Italian Kale	S
Mustard	'Red Giant'	Red Mustard	S, AT
	'Mizuna'	Potherb Mustard	J, S, AT
	'Tatsoi'	Flat Pak Choi	J, S, AT
	'Osaka Purple'	Red Mustard	CG
Swiss chard	'Bright Lights'	Swiss Chard	J, S, B, FG, N, P
	'Ruby Red'	Rhubarb Chard	P

* Seed Sources:

AT = American Takii, 301 Natividad Rd., Salinas, CA 93906; Ph: (831) 443-4901; Fax: (831) 443-3976

B = Ball Seed, 622 Town Road, West Chicago, IL 60185; Ph: (800) 879-2255; Fax: (800) 234-0370

CG = The Cook's Garden, PO Box 535, Londonderry, VT 05148; Ph: (800) 457-9703; Fax: (800) 457-9705

FG = Fred C. Gloeckner 600 Mamaroneck Avenue Harrison, NY 10528; Ph: (914) 698-2300; Fax: (914) 698-0848

J = Johnny's Seeds, 1 Foss Hill Rd. RR 1 Box 2580, Albion, ME 04910; Ph: (207) 437-4301; Fax: (800) 437-4290

N = Novartis Seeds, 5300 S. Katrine Avenue, Downers Grove, IL 60515; Ph: (800) 323-7253; Fax: (800) 327-9736

P = Park Seed, 1 Parkton Avenue, Greenwood, SC 29647; Ph: (800) 845-3369; Fax: (800) 275-9941

S = Shepherd's Garden Seeds, 30 Irene St., Torrington, CT, 06790 Ph: (860) 482-3638; Fax: (860) 482-0532

Table 2. Ornamental cabbage and kale cultivar descriptions and seed sources

Cultivar	Plant Type*	Description	Seed Source**
'Osaka Pink' Fig. 8	OC	Blue-green foliage; pale fuchsia to a deep fuchsia center color; upright growth habit	B, FG, N
'Rose Bouquet'	OC	Wavy margins; purplish-green foliage; deep pink to magenta center; less aggressive growth habit than 'Osaka' series cultivars	B
'Peacock White'	ONK	Medium green foliage; deeply grooved leaves; pronounced textured center diffuses pigment; faint blush accent in milky white center; tall growth habit	B, FG, N, P
'Flamingo Plumes' Fig. 9	ONK	Notched leaf margins; deep magenta pigmentation on purplish foliage; open, textured center diffuses color; slow to develop color; excellent specimen plant in the landscape; vigorous growth habit	FG
'Kamone White'	OCK	Dark green foliage; milky white, expansive center color; semi-creamy center; rated the best curly kale by NC State researchers	B
'Chidori Red'	OCK	Fringed leaved kale with purple foliage; extremely curly leaf margins; deep magenta center color; mounded shape	B, FG

* OC = Ornamental cabbage, ONK = Ornamental notched kale, OCK = Ornamental curly kale

** Refer to footnotes of Table 1.