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The IPM Scout

Command (active ingredient clomazone) is one of the few herbicides registered for use on pumpkin. It controls annual grasses and some small-seeded broadleaf weeds, such as lamb's quarter and velvetleaf. The disadvantage of this herbicide is that it persists in soil and many vegetable crops are sensitive to it. The recommended waiting period before planting another vegetable crop (other than pepper) is 9 months after application. Symptoms of Command injury are a distinct whitening of leaves and stems. A retired extension horticulturist at Clemson used to say you could always tell when someone had applied Command to soybean, because all of the nearby tree-of-heaven trees had white leaves.

Symptoms of Command injury were observed in 1997 in the cultivar trial at Clemson University's Coastal Research & Education Center in Charleston, SC. Command was applied at the labeled rate of 2 pints/acre before the field was bedded and rows were covered with white plastic mulch. As they say on MTV, "Don't try this at home." Apparently, the plastic trapped Command, which is very volatile, and phytotoxicity was observed on many cultivars. Most of the plants recovered over time and yield did not appear to be affected.

(continued on page 4)

Field Sensitivity of Pumpkins to Command Herbicide

Cultivar	Rating*	Rank**
HMX6688	4.9	hi
Wizard	4.2	mid
Spookie	3.7	mid
Connecticut Field	3.7	mid
Magic Lantern	3.7	mid
Appalachian	3.0	mid
Happy Jack	2.9	mid
Tallman	2.7	mid
Howden	2.6	mid
Ghost Rider	2.5	mid
Tom Fox	2.4	mid
Pankow's Field	2.4	mid
Howden Biggie	2.3	mid
Rouge Vif d'Etamps	2.3	mid
Big Max	0.5	lo
Mammoth Gold	0.5	lo

*Rated on a scale of 0 (no injury) to 10 (maximum).

**Degree of sensitivity, based on statistical analysis.

Cultivar Corner

Did you try a new pumpkin cultivar or two this season? If so, now is the time to make a few notes about how well they performed. Most importantly, were they better, worse, or about the same as the cultivar(s) you grow now?

- Did the vines hold up until the end of the season? If not, don't be discouraged, most cultivars start to "go down" before all fruit are mature.
- Did the fruit get as large as the cultivar description said they would? Fruit often do not reach maximum size under the hot, humid growing conditions in the Southeast.
- Look at the fruit. Weigh five and get an average weight. Measure the height and look at the overall shape. Are they uniform or lopsided?
- Check the handles: are they firm or soft? Measure the handle length on the same five pumpkins.

Now pick five pumpkin fruit from your standard cultivar, weigh them, and measure their handles. These numbers will give you an objective, accurate measurement of how well the fruit of a new cultivar compare with your standard cultivar. Don't forget to estimate overall yields as a final comparison.

The powdery mildew-resistant cultivar '**Magic Lantern**' was featured in this column in the past two issues. It will be available to **home gardeners** from Harris Seeds, P.O. Box 22960, Rochester, NY 14692-2960; 1 800-544-7938. Seed supply is limited, so order early.

Market Window

Most pumpkins are sold to be carved into jack-o-lanterns. Here are a few carving tips to use yourself or feature at your farm market. Tiny pokers, saws, shapers, and drills are easier and safer to use than a standard paring knife. These tools are available in supermarkets and craft stores.

Need some accessories to liven up a jack-o-lantern face? Try adding other vegetables, like carrot noses, bell pepper ears, parsley whiskers, or green onion hair. Attach them to the fruit with toothpicks or pipe cleaners, or carve small holes out of the rind and insert.

(Source: "A Pumpkin Primer" by Kate Godfrey in PARENTING, Oct. 1994.)

Young readers, ages 4 to 8, will enjoy *A Pumpkin Patch* by Elizabeth King (hardcover, Dutton, 1990, \$14.99; or paperback, Puffin, 1996, \$5.99). Easy-to-read text and plenty of realistic photographs describe the pumpkin growing season on a commercial farm from tillage to marketing. From an agricultural scientist's perspective, the text is very accurate and real-world problems, like weeds and insects, are mentioned. Although not labeled as such, three of the photographs show virus symptoms on fruit!

A better choice for very young readers, ages 2 to 5, is *Apples and Pumpkins* by Anne Rockwell and illustrated by Lizzy Rockwell (hardcover, Simon and Schuster, 1989, \$15.00; paperback, Aladdin, 1994, \$4.99). The story, written from the perspective of a little girl, describes a trip to a farm in the fall to pick apples and pumpkins. The colorful drawings will appeal to toddlers.



Ask the Great Pumpkin

Q: I spaced my pumpkin rows 12 feet apart but I'm running over vines when I spray them. Will this hurt my yield?

GP: Unfortunately, yes, it will. Pumpkin vines set flowers all along the vines, so if you are shortening the vines by injuring them, you will have fewer flowers and fewer fruit. On the other hand, the vines may branch more than normal if the terminal bud is killed. A wide spacing like 12 feet leaves plenty of space for long vines to run, but you still need to leave a drive row for the tractor and sprayer every so often. How many drive rows you need depends on the width of your sprayer boom.

Q: I think I'm seeing black rot on my pumpkin fruit. I've been spraying chlorothalonil, but what is the best fungicide to control it?

GP: Black rot is one of the most common fruit rots on pumpkin, especially if pumpkin or another vine crop has been planted in the same field more than 2 years in a row. (The same fungus causes gummy stem blight on watermelon, cantaloupe, and cucumber, but gummy stem blight is usually not a problem on pumpkin and squash vines.) Black rot shows up as round, tan to brownish spots that turn black and soft as the fungus grows into the fruit. (See photo of symptoms on page 3.) This disease also affects winter squash and gourds.



Close-up of black rot on pumpkin fruit. This fruit has an unusually large number of individual spots where the fungus infected the rind. Normally, spots will be fewer but larger.

Chlorothalonil (sold as Bravo, Echo, Terranil) currently is the best fungicide. Benomyl (sold as Benlate) is no longer recommended in South Carolina, because the black rot fungus has become resistant to this fungicide. Remember that chlorothalonil is only a protectant, so it must be applied before the fungus infects the fruit. For maximum protection, apply chlorothalonil at the highest labeled rate on a weekly schedule. Use at least 50 gal. water per acre and a pressure of 100 psi to get good coverage of the fruit. Finally, do not plant any vine crops in this field for the next 2 years to allow time for the black rot fungus to die out in the soil.

Q: My pumpkins rotted in the field just before they got ripe. Now they're a mass of white mold with little brown "things" all over them. How can I prevent this from happening next year?

GP: The disease which destroyed your pumpkin fruit is Southern blight, caused by a fungus which lives in the soil. The tiny, round, tan to dark brown "seeds" are the survival (over-wintering) structures of this fungus. This fungus does not survive north of

the Mason-Dixon line, where winter temperatures kill it.

In the South, it occasionally causes fruit rots on cucurbits, such as cantaloupe, watermelon, and yes, pumpkin. Southern blight fruit rot seems to be worse during warm, wet periods.



Close-up of Southern blight fruit rot on pumpkin. The thick, coarse, white mold and beige, tan, and brown seed-like pellets are characteristic signs of the fungus.

There are no fungicides which can be used on pumpkin which control Southern blight. Move fruit off the soil onto plastic-covered beds. Deep plow the debris to bury it, as this fungus mainly grows near the soil surface. Do not plant pumpkin after tomato, pepper, eggplant, or snap beans, as these vegetables are good hosts for the pathogen.

Send your questions about growing, selling, or buying pumpkins in the Southeast to: **SC Pumpkin News**, c/o Dr. Anthony Keinath, Coastal REC, 2865 Savannah Highway, Charleston, SC 29414-5332; fax: 843.571.4654; or via the Internet to: tknth@clemson.edu.

Note: The URL address for **SC Pumpkin News** on the Worldwide Web has changed to <http://virtual.clemson.edu/groups/hort/vegprog.htm>



Average Sensitivity of Pumpkin Seedlings to Command Herbicide in Four Greenhouse Tests

Cultivar	Rating*	Rank**	Cultivar	Rating*	Rank**	Cultivar	Rating*	Rank**
Jack-O-Lantern	5.5	hi	Triple Treat	3.4	mid	Happy Jack	2.4	mid
Howden Biggie	4.5	hi	Howden	3.4	mid	Rouge Vif d'Etamps	2.4	mid
Early Autumn	4.2	hi	ProGold 510	3.4	mid	ProGold 500	2.3	mid
Small Sugar	4.1	hi	Ghost Rider	3.3	mid	Cinderella	2.2	mid
Spookie	4.1	hi	Wizard	3.3	mid	Buckskin	2.0	mid
Thomas								
Halloween	4.0	hi	Aspen	3.1	mid	Casper	1.9	mid
Connecticut Field	4.0	hi	Jack-Be-Quick	3.1	mid	Little Lantern	1.7	mid
Frosty	4.0	hi	Trick or Treat	3.1	mid	Merlin	1.6	lo
Pankow's Field	3.9	hi	ProGold 300	3.1	mid	Harvest Moon	1.3	lo
Baby Boo	3.8	mid	Jack-of-All-Trades	3.0	mid	Peek-A-Boo	1.3	lo
Younge's Beauty	3.8	mid	Oz	3.0	mid	Mystic	1.3	lo
Magic Lantern	3.8	mid	Autumn Gold	3.0	mid	The Great Pumpkin	1.2	lo
Rocket	3.7	mid	Funny Face	2.9	mid	Cushaw Green Stripe	0.9	lo
Appalachian	3.7	mid	Trax Field	2.9	mid	Atlantic Giant	0.7	lo
Baby Bear	3.6	mid	Munchkin	2.8	mid	First Prize	0.7	lo
Tom Fox	3.6	mid	Big Autumn	2.5	mid	Burpee Prizewinner F1	0.3	lo
Spooktacular	3.5	mid	Fairytale	2.5	mid	Prize Winner	0.3	lo
Spirit	3.5	mid	Jackpot	2.5	mid	Big Max	0.3	lo
Baby Pam	3.5	mid	Jack-Be-Little	2.5	mid	Mammoth Gold	0.3	lo
			Trickster	2.5	mid	Lumina	0.2	lo

*Rated on a scale of 0 (no injury) to 10 (maximum). Data provided by Dr. Howard Harrison, USDA, ARS, Charleston, SC.

**Degree of sensitivity, based on statistical analysis.

(**Command** sensitivity continued from page 1)

After this injury was observed in the field, Dr. Howard Harrison, research agronomist at the USDA U.S. Vegetable Lab in Charleston, SC, tested almost 60 pumpkin cultivars for sensitivity to Command. In the greenhouse, seedlings of some cultivars were highly sensitive to even low concentrations of Command. Others, particularly the C. maxima cultivars (the "giant" pumpkins) were completely insensitive. Most cultivars fell in the middle group.

The take-home message is that growers need to follow label directions carefully when applying Command. Do not apply it under plastic mulch! Use Command with caution if you grow one of the highly sensitive cultivars. On the other hand, if you are growing an insensitive cultivar, you may want to try Command if the plant-back waiting period fits your overall crop rotation plan.



SC Pumpkin News

VOLUME 3, No. 2

October 1998

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Published quarterly (Jan., Apr., Jul., & Oct.). To subscribe, mail your name, address, and E-mail address (if available) to SC Pumpkin News, c/o Dr. Anthony P. Keinath, Coastal REC, 2865 Savannah Highway, Charleston, SC 29414-5332. Back issues are available at no charge. **SC Pumpkin News** is available on the World Wide Web at

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Clemson University Cooperating with U.S. Department of Agriculture and South Carolina Counties. Issued in Furtherance of Cooperative Extension Work in Agriculture and Home Economics, Acts of May 8 and June 30, 1914.

Next issue (Jan. '99): Report on silver mulch trial for aphid control.