

Canola Bits

Bringing Canola Rotation to Winter Wheat Producers

Mark Boyles & Heath Sanders

Oklahoma State University

In cooperation with the Great Plains Canola Association

Welcome to a series of articles devoted to information on production techniques, current local and federal issues, activities and information of interest on winter canola in the southern Great Plains. This issue is devoted to examining how winter canola evaluation and breeding efforts cosponsored by KSU and OSU has provided information on the viable winter canola varieties we use today. Mike Stamm the KSU / OSU will provide us with an update on winter canola breeding in the Southern Great Plains.

The joint canola breeding and management program at Kansas State University and Oklahoma State University is off to a great start in its fourth season. This year's crop looks impressive as an acceptable stand is growing at 100% of the testing locations prior to the winter dormancy period. Adequate moisture in the planting zone provided ideal conditions for planting and sub-soil moisture is abundant at most locations. Planting occurred prior to the heavy rains that plagued a large portion of the winter canola growing region, so fall growth is just right. We expect to observe genetic variation among entries in winter tolerance if the weather is conducive this year.

The breeding program and our cooperators manage a three-tiered, yield trial system in Kansas and Oklahoma to test experimental and commercial canola entries. Testing locations in Kansas include Colby, Hesston, Hutchinson, Manhattan, and Parsons. Testing locations in Oklahoma include Enid, Goodwell, Lahoma, Perkins, Tipton, and Weatherford. The majority of these locations are experiment fields, so please feel free to stop by and view the winter canola plots throughout the season. The National Winter Canola Variety Trial (NWCVT) is coordinated by the canola breeding program. This trial is comprised of 51 entries, of which 27 are commercially available. The NWCVT allows researchers to evaluate the latest experimental and commercial genetics at more than 60 environments in the U.S., including 9 locations in Kansas and Oklahoma. Results from the NWCVT, published in the spring of the following year, provide canola growers a reference for variety selection. Expect to see results from the 2008 trials sometime in March. The breeding program is focused on enhancing germplasm for winter canola breeders and bringing new varieties to winter canola growers. One experimental variety, KS9135, is being considered for joint release by K-State and OSU. Release is contingent on the 2009 performance data. Several more experiment cultivars are in the pipeline. Developing new, adapted varieties requires about 10 years of observation, purification, and yield testing. Significant work has gone into breeding germplasm producing high stability oils. High stability oils make superior feed stocks for biodiesel production and have longer shelf-life's and fry lengths than common cooking oils. This work is being accomplished by incorporating genes that code for high oleic, low linoleic and low linolenic fatty acid profiles. Our initial results look very promising and field observations will begin next season. The goal is to develop cultivars with superior oil quality that are adapted to the southern Great Plains. Funding is provided by the DOE South-Central Sun Grant Initiative, which is coordinated by OSU.

Thus far, the program has increased the number of breeding populations that are tolerant to post-emergent glyphosate applications. Glyphosate resistant winter canola will enable producers to better manage troublesome winter annual, grassy weed species in their cropping systems. This season, two cultivars with glyphosate

resistance are being yield tested, and tolerance testing will be coordinated in the region next season. Additionally through a specific cooperative agreement with the USDA-ARS, the breeding program and OSU entomologists, Kris Giles and Ali Zarrabi, are screening germplasm from the North Central Region Plant Introduction Station for turnip aphid feeding tolerance. The project began by screening more than 300 winter-type accessions for tolerance at the seedling stage. Promising accessions will undergo further testing at different stages of growth. Partial genetic tolerance to aphid feeding combined with an insecticidal seed treatment, could help protect canola fields from this hard-to-control insect pest. In 2007 and 2008, 160 winter oilseed rape accessions from Europe were planted in the greenhouse and in the field in Kansas and Oklahoma. These accessions will be evaluated for winter tolerance, plant height, bloom, maturity, and lodging and shattering tolerance. Top performing accessions from last season are being intercrossed this fall in the greenhouse.

Tailgate Talk:

Overall, winter canola in Oklahoma and southern Kansas looks relatively good this time of year. It is normal for canola leaves to discolor, turn purple and die in the winter. Much of the leaf tissue freezes and dries resulting in brown leaves with a mixture of green leaves, but as long as the center crown does not die, the plants are alive. The crown will usually still be green and anchored to the soil. Canola growth will resume in early spring and new leaves will appear from the plant crown. January provides an opportune time for topdressing applications. Always revert back to your soil test for fertility recommendations. The remainder 2/3 nitrogen that is generally suggested can be applied in liquid or dry form. Canola generally requires 2.5 lbs of N per bushel or 50 lbs. Canola also has a high demand for sulfur because of its high content of sulfur containing proteins. Sulfur can be added to the topdressing application at 10-20 lbs per acre. Canola requires more management than wheat, so make sure you are observing the crop in the period of semi-dormancy. Start scouting your canola fields for diamond back moth, green peach and turnip aphids. Diamond Back moths will over winter and feed in the crown of canola plants. In a cold winter this may be the only place green and an excellent habitat for small larvae. If infestations in the crown are high they can be very destructive and stand loss may occur throughout the field. To check for them pull up a few plants and tap the crowns on a white piece of paper. You will see the larvae quite easily if they are there. Green peach and turnip aphids tend to feed on the underside of the canola leaves. Make sure you flip the leaves over and check, especially those leaves closest to the ground.

Sampling for Green Peach or Turnip Aphids in Winter Canola

Pattern: Walk diagonally across field and stop 10 times

1. Check 3 plants at 10 stops (30 plants)
2. Count aphids on 3 consecutive plants (check under leaves!)
3. Note other spots with dead or dying plants

Action Thresholds: For every aphid per plant 0.5 lb of seed is lost in a field; canola can handle large numbers of aphids before a costly insecticide is justified. It is important to delay insecticide use until aphids approach economic levels because:

- Use of insecticides on very low populations will result in net \$ losses.
- Delaying the first insecticide application reduces the chance on needing a second or third application.

To prevent economic losses, manage aphids when:

<u>\$/lb</u>	<u>Aphids / Plant:</u>
0.30	50 – 100
0.25	60 – 120

**Lower #'s during dry conditions!!

0.20 70 - 140

0.15 80 - 160

0.10 90 - 180

This information was provided by Dr. Kris Giles, Oklahoma State University, Entomology and Plant Pathology. For further information on identifying or controlling pest problems in your field contact your local OSU county extension office.

Canola Equipment Digest:

OSU is providing a free contact point for people that have equipment useful to canola growers that is for sale or lease. This includes seeding equipment, draper type swathers, pushers, combine pickup heads, and direct harvesting equipment. We will also list growers and companies offering custom planting, swathing, harvesting, consulting or new farm equipment. The information will be listed on the Oklahoma State University web site www.canola.okstate.edu. If you have something to list that you are looking for, something you want to sell or a custom service you can provide in your area send an e-mail to mark.boyles@okstate.edu. Please include description, general location, phone and e-mail address. We will not be listing prices or any advertizing. The objective of this project is to assist growers in locating the custom services they would like to have or the equipment they are looking for.

For more information on winter Canola visit these web sites:

<http://greatplainscanola.com/> Subscribe to online GPCA newsletter.

<http://www.canola.okstate.edu>

<http://uscanola.com/>

Our Contact your local OSU County Extension Office