



Pre- and Early-Season Weed Management-

Dr. Angela Post- Small Grains Extension Weed Scientist

Winter canola is an excellent rotational partner with wheat. Integrating canola into a wheat system allows for the cleanup of weedy fields with primarily grassy weed problems. Conventional and Roundup Ready (RR) varieties are excellent choices for managing most grassy weeds including ALS-resistant populations, because grass-only herbicide options can be used in canola without crop injury. For specific grasses that are very difficult to control, like cereal rye and jointed goatgrass, it is advisable to use canola in year one of your rotation and Clearfield wheat in the second year of your rotation before going back to conventional wheat varieties. Due to sensitivity of canola, Clearfield wheat varieties should not be used the year prior to rotating into canola.

Canola planting time is just around the corner and many are going out now with preplant burndown applications. Remember that canola is sensitive to dicamba, 2,4-D, and MCPA and these products should not be used inside of 30 days before planting. Glyphosate, glufosinate and paraquat are all potential options for removing broadleaf weeds in no-till systems prior to planting. These products have no planting restriction for canola. Tillage is the best option to remove weeds in conventionally tilled systems.

It is important to consider your previous herbicide choices when planning for canola in the fall. Many herbicides used for spring weed control in wheat can limit rotation to winter canola. These include Group 2 herbicides all of which have long rotation restrictions to canola, meaning you cannot plant canola in these fields for 18-24 months depending on the product. See Table 1 for a list of specific restrictions. If you have used one of these products in wheat in the spring, you must plant a canola variety with the SURT trait. Examples of varieties with this trait include: DKW 45-25, DKW 46-15, DKW 47-15, HyClass 115W, HyClass 125W. All of these varieties are also RR. Kansas State also has an open-pollinated non-RR variety called Sumner with the SURT trait for growers that prefer to grow conventional canola. Note that the SURT trait is not a genetically modified trait.

No additional in-season herbicide options have been added to the toolbox for winter canola growers in the upcoming season. Both trifluralin (Treflan) and ethalfluralin (Sonolan) can still be used as preemergent weed control options in canola in conventionally tilled systems. Both need to be mechanically worked into the ground and need an activating rainfall to work properly. Quisqualofop (Assure II), sethoxydim (Poast), and clethodim (Select and many generics) are the grass control herbicides available for use in canola and can be used on any canola variety including RR varieties. Roundup Ready canola growers are allowed two applications of glyphosate at 22 oz/A each over the top of the emerged crop. Clopyralid (Stinger) is the only over-the-top broadleaf control option other than glyphosate. These weed control applications should be made early in the season between 2- and 6-leaf canola, and prior to bud formation, while weeds are still very small. Applications should be spaced at least 14 days apart. Early applications will eliminate fall weed competition with canola and protect

yield. For more information or questions involving weed management in canola contact Extension Weed Specialist Angela Post at 405-744-9588 and follow @OSUWeedScience.

Table 1. Rotation restrictions for planting canola following wheat. For herbicides applied in crops other than wheat please refer to the herbicide label.

Herbicide Name	Rotation Restriction¹	Group 2²	Herbicide Name	Rotation Restriction¹	Group 2²
Affinity Broadspec	2 months	Yes	Glean	Field Bioassay Required	Yes
Affinity Tankmix	2 months	Yes	Harmony Extra SG	2 months	Yes
Agility SG	22 months or more	Yes	Huskie	9 months	No
Ally	Field Bioassay Required	Yes	Maverick	Field Bioassay Required	Yes
Ally Extra	Field Bioassay Required	Yes	Olympus	Field Bioassay Required	Yes
Amber	Field Bioassay Required	Yes	Olympus Flex	12 months or field bioassay ³	Yes
Axial XL	4 months	No	Peak	10-22 months	Yes
Axiom	12 months	No	Powerflex HL	9 months	Yes
Beyond	18-26 months ³	No	Rave	Field Bioassay Required	Yes
Finesse	Field Bioassay Required	Yes	Zidua	12-18 months ⁴	No

¹Minimum interval between herbicide application and seeding canola. Refer to full herbicide labels for specific information as geography, pH, and rainfall may affect this interval.

²Rotation restriction can be overcome with use of a SURT canola variety.

³Rotation intervals depend on geography.

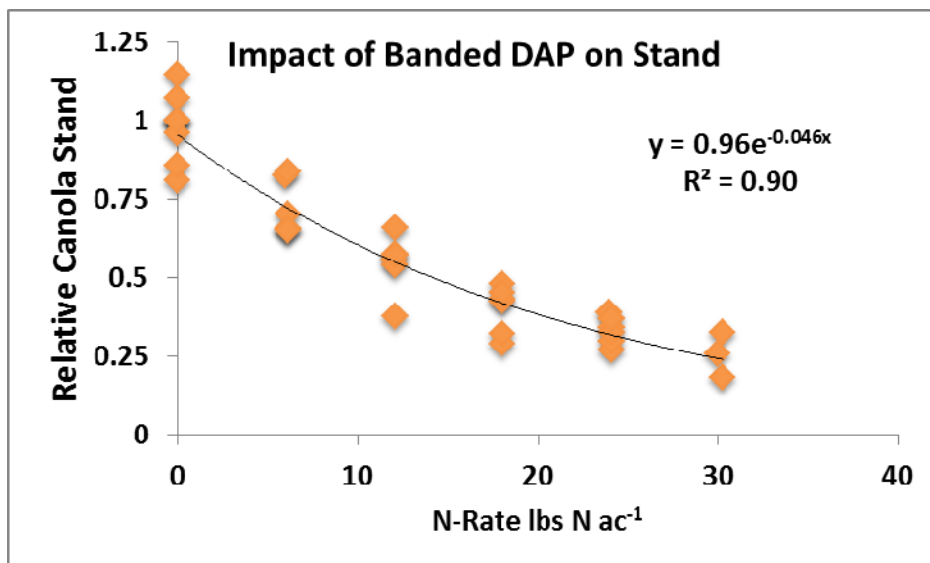
⁴Rotation interval depends on herbicide rate.

Pre plant fertilizer concerns with Canola

Dr. Brian Arnall- Precision Nutrient Management Extension Specialist

When it comes to pre-plant fertility issues with canola, I typically have two soap boxes. But at this point in the canola game we are behind in terms of getting soil samples collected or applying lime and getting a boost at emergence. So assuming pH is good and you know what your soil nutrient level is we can move on to planting. One thing that over the past seven or eight years keeps coming up is the importance of starter fertilizers and the rates and sources used. Getting that little canola plant off to a good start is extremely important however with that little bitty seed a little goes a long way.

The figure below shows the impact of DAP (18-46-0) placed in row, on relative canola stands, when canola was planted in 15" rows. At 5 lbs/A of N or 28 lbs/A of DAP, the canola stand is reduced to 75%. While this seems like a great loss, the compensating nature of canola and the fairly high seeding rates used, this is a manageable level. The benefits of the additional nitrogen and phosphorus applied with the seed also help out-weigh the loss of stand. The addition of the P near the germinating seed is vital. The phosphorus aids in early root and shoot growth, helping the crop to get off to a good start. In areas where soil pH is of concern the P near the young seedling will reduce aluminum toxicity and allow the plant to tolerate the low pH. Keep in mind, while banding P will help in acidic soils, canola is still very sensitive and will not tolerate the same low pH conditions as our winter wheats.



IMPACT OF DAP (18-46-0) PLACED IN-ROW ON CANOLA STAND IN TERMS OF LBS N/A

One very important factor to keep in mind is the impact of the critical rate and row spacing. The 5 lbs of N per acre critical level set for 15" row spacing is increased to 10 lbs on 7.5's and cut to 2.5 lbs on 30's. The change in rate is because we use lbs per acre. So if you apply the same amount of material per acre on a 15" spacing and a 30" spacing there is actually twice as much material in the 30" row. Table 1, shows the equivalent amount of N placed in row for popular row spacing's.

Oklahoma State has released a smart phone app, available for both apple and android devices, to aid in determining maximum in-furrow rates. Canola Starter app provides guidelines based upon the nutrient concentrations of the fertilizers you plan to use. The final note on in-furrow fertilizer with Canola, avoid using urea. The likelihood of injury from the urea converting to ammonia greatly outweighs any potential benefits. For further information, comments, or questions please contact Dr. Brian Arnall Extension Precision Nutrient Specialist 405-744-1722 or following me on Twitter @OSU_NPK.

Row Spacing	Lbs N per acre		
6"	13	25	38
7.5"	10	20	30
12"	6	13	19
15"	5	10	15
30"	2.5	5	7.5

EQUIVALENT AMOUNT OF N BASED ON 15" ROW SPACING

Canola Starter available on iOS and Android. For more information see <http://www.dasnr.okstate.edu/apps>.

Winter canola planting decisions:

Josh Lofton- Cropping Systems Specialist
Josh Bushong- Extension Associate

Stand establishment is one of the most critical practices in canola planting. This is not only because these stands are highly influential to end of the season yields but because getting the crop up with adequate growth will be critical to give the plants the best over-winter survivability possible. To accomplish this, growers need to make sure they make good field selection and follow good planting practices

Field Selection:

Soil nutrients are a critical aspect. Soil samples should be collected on a regular basis to ensure optimum productivity. Also, ensure recommendations for winter canola are followed, as nutrient recommendations for other crops may be invalid. For more information canola fertilizer management refer to the nutrient management section by Dr. Arnall.

Winter canola grows similar to winter wheat. Fields that can adequately produce wheat have the potential to produce canola. These include, well-drained soils with adequate soil nutrients. However, canola can be more sensitive than wheat. One aspect that canola can be more sensitive to is soil pH. While wheat can be grown in soils as low as 5.5 without significant yield loss, canola must be grown on soils with pHs above 5.8. In fact, canola is best grown in soils with soil pHs ranging from 6.0 to 7.0. Therefore, it is essential that if fields have lower pH, lime be applied with adequate time to neutralize the acidic soil pH before rotating into canola.

In addition to all the soil conditions, crop rotation should be considered prior to planting canola. One of the major hindrances in growing canola in rotation with other crops is herbicide carry-over. For detailed information regarding this aspect, refer to table 1 in the weed management section. To account for this, detailed field records should be kept and consulted before rotating with canola.

Planting Date:

Planting time depends on many aspects. Insured growers should plant within the constrained planting dates. For Oklahoma, the earliest planting date is September 10th with the latest date being October 10th. However, within these guidelines, seedbed and environmental conditions should be the driving factor to determine when to plant. The goal of these planting dates is to have the crop germinate, emerge, and establish 6-8 true leaves prior to the first killing freeze. As a general rule, the crop should be planted 4 to 6 weeks before this freeze. To achieve good establishment of the crop, canola should be planted into firm seedbed with adequate soil moisture. If canola is planted into dry soil (dusted in), the effective planting date will be delayed until adequate conditions for germination and emergence exist. In no-till systems, it is important to remember that canola emergence and growth will be slightly delayed. Therefore, if adequate conditions exist, no-till fields should be planted before similar conventionally tilled fields.



Uneven canola emergence. Canola on left emerged later and did not have enough time to put on adequate growth (Photo courtesy of Josh Bushong)

Planting depth, plant spacing, and seeding rate:

Since canola is a small seeded crop, shallow planting is required. For best germination and emergence, seeds should be planted between 0.5 and 1 inch. If adequate moisture is available deeper, planting depth can be increased. However, deeper planting has the potential to decrease germination, percent emergence, and early fall growth, so deeper planting should only be used when the planting condition advantage is present and only on certain soils. Therefore, caution should be used in planting deeper than 1 inch. Furthermore, even though moisture may be present deeper, seeds should not be planted deeper than 1.5 inches.

Oklahoma growers have options when deciding row spacing used for planting canola and depend on what equipment there is available and their production system. Since canola is typically rotated within a winter wheat production system, box drills and air seeders are typically widely available. Row-spacing for these can range from 6 to 15 inches. Row spacing within this range has little impact on final yields. As producers move from drills and air seeders to planters, row spacing typically increases from 15 up to 30 inches. All of the row-widths have the potential to produce adequate canola. Some, however, will be more beneficial than others. Narrow row spacing has the potential to result in early canopy closure, reduce potential weed competition, and may help reduce shatter prior to harvest (especially when direct harvested). Wider spacing, however, allows for some flexibility in specialized planter attachments used, especially row-cleaners, which can be greatly beneficial in no-till systems.

Seeding rates for canola in Oklahoma range from 1 to 5 lbs/A. However, row spacing plays a critical role on seeding rates. When canola is planted on less than 15 inch spacing, some flexibility exists for planting rates. Higher seeding rates can produce more uniform stands, uniform maturity, and thinner stalks that can greatly help harvest efficiency. Too high of stands can increase disease incidence, winterkill, and lodging. When row spacing is increased beyond 15 inches, care should be taken not to over seed. High seed populations can increase fall growth and potentially increase hypocotyl height, which in turn can lead to high winterkill. Optimum populations for this wider row spacing typically range from 2 to 3 lbs/A.

For further information, comments, or questions please contact Josh Lofton Extension Cropping Systems Specialist at 405-744-3389 or follow me on Twitter @OSU_oilseeds.

While producers have faced many challenges over the last couple of seasons in Oklahoma agriculture, the outlook for winter canola looks very promising for the upcoming season. Producers should focus on taking all of the right steps to ensure the 2015-2016 crop starts on the right foot and takes full advantage of the promising conditions this season. Good luck to everyone one on their upcoming production season and if anyone from Oklahoma State extension can help or assist in any way, please feel free to contact.