Agronomic Recommendations For Production Of Camelina In Montana

Seeding

It is recommended that growers plant 2.5 –3.0 pounds of pure, live seed per acre under dryland conditions in eastern Montana. In no-till situations or in fields where weed conditions may limit production, seeding rates can be increased to 5 pounds per acre. This higher seeding rate will not generally increase yields but there are no current herbicides registered for use in camelina and this will reduce weed competition. It is also recommended that the seed either be broadcast followed by packing the seed to assure seed-soil contact, or that the seed be drilled very shallow with at least some seed visually on the soil surface. Camelina generally has the ability to germinate with minimum rainfall and establishes quickly. It is also recommended that the crop be planted as early as possible in the spring, typically between March 1 and March 31. Plantings after April 15 have shown yield declines on average of 100 lbs per week of delay. Camelina is very frost resistant as a seedling and stand losses have not been observed at temperatures as low as 20F. Camelina can be erratic in establishment, especially in broadcast stands. Please be patient. This crop is highly adaptable to a wide variety of environments and stands will typically be observable by mid- April or within 10-14 days of planting.

Soil Fertility

Growers should either pre-apply fertilizer if drilling, or if broadcasting the seed, apply it with the seed. Camelina is a low fertility-requiring crop. Typically if yields are expected to be 1200-1500 lbs per acre, it is recommended to use 35-40 lbs/a Nitrogen: 25-30 lbs/a Phosphorus and 20 lbs/a Sulfur. In areas where yields are expected to be 1800-2000 lbs/a, it is recommended to use 40-50 lbs/a Nitrogen: 25-30 lbs/a Phosphorus and 20 lbs/a Sulfur. Camelina has a natural, pale green color and this should not necessarily be interpreted as low soil fertility.

Weed Control

While there are currently no registered herbicides for camelina, it is naturally very weed resistant and good stands of camelina have shown a minimum of weed contamination. European research has shown camelina to generate chemical compounds that suppress weed growth. The herbicidal effect of camelina is short lived and will not affect next years crop. Recommendations on herbicides from the state of Montana are expected within two years.

Disease and Insect Control

No insects have been found in Montana that feed on camelina. In western Montana, downy mildew was found in some experimental trials. This is a seed borne disease and can be controlled with seed treatment. No downy mildew has been observed east of the continental divide. While white mold has not been seen in camelina in Montana, growers should monitor for this as it is a disease common to brassicas such as canola and members of the sunflower and legume families. It typically is found in higher moisture environments.

Harvest

Harvest will begin late June or early July, typically. The crop can be taken either standing or in a swath. If swathing, wait until the first seedpods begin to yellow. Swathing then needs to proceed rapidly as seeds will mature and ripen within a few days. Swathing is recommended if lodging occurs or there is a significant amount of green weed material in the field. Generally, growers should expect to take the crop standing. Likewise, the crop will ripen within a matter of a few days. Barring high wind damage, the crop can be left to stand until pods are a straw to tan color. This will occur within days of the first yellow coloration of pods in the field. Growers should pull a moisture sample. Combining should not be done if seed moisture is above 10% using a canola standard in a moisture meter. The field may still contain some green stems at this point.

Combine Settings

Camelina is a remarkably adaptable crop and pods tend to rise to a uniform level making combining easier. If direct cutting, reel speed should match ground speed. We recommend growers slow ground speed to prevent throwing camelina seed over the back of the combine. Header height can be set fairly high to minimize green material through the combine. Camelina straw is tough and should be minimized during harvest. We recommend a 9/64 screen be installed over the lower sieves to allow seed separation from seed capsules. Attempts to manipulate air by cutting flow to a minimum have been effective. This technique leaves a very high residue of inert materials in the bin. Growers should try to keep inert materials to less than 5-8%.

Seed Storage

Camelina seed are surrounded by a light mucilage layer that easily absorbs moisture. While this aids in seed germination (like a super slurper), it is detrimental to seed storage. Seed stored at high moisture can sweat and seeds can stack in a bin if seed moisture exceeds 10%. Storage is recommended at 8%. Camelina seed is not round like canola nor is it slick like flax so transportation and storage will not require as much taping of trucks and bins but reasonable pre-treating of equipment by taping or caulking will reduce crop loss. Camelina has not been observed to be eaten by rodents or insects so bin treatments are currently unnecessary.

Volunteer Camelina

Camelina seed is germable within two weeks post-harvest and has shown no seed dormancy. Seed lost during harvest typically will germinate with the first rain after harvest if on the soil surface. Volunteer camelina can be handled by either fall weed control or if left in the field, typically will die during the winter. In cases of a mild winter, spring camelina can survive and be controlled with the following crops recommended practices.

Following Crops

Camelina is recommended in a small grain rotation. Brassicas, such as canola, have shown that they can increase yields of a wheat or barley crop that follows brassica in a crop rotation. And while this has not been broadly tested in camelina, the crop has not been found to inhibit growth in crops that follow it.