

TILLAGE

Many tillage regimes are practiced in Canada including conventional, strip, ridge, minimum and zero-tillage. Many factors are to be considered when deciding what tillage regime to utilize, including soil type, climate, fertilizer regime and rotation. Different tillage regimes are associated with different impacts on crop production and the environment. For example, conventional tillage can be utilized to control specific crop pests, however it is also associated with erosion. Minimum- or zero-tillage can be implemented to manage erosion and preserve the soil profile. An understanding of the benefits and drawbacks of each tillage regime is important when deciding which to utilize.

HARVESTING

Timing

Sunflowers are usually the last crop to be harvested in the fall since fall frosts help in drying down the crop. The period between maturity and harvest should be kept as short as possible to minimize losses from bird damage and head-rot diseases.

Desiccation

Chemical desiccation is used to quicken dry-down of sunflower heads. Desiccation is effective before a killing frost in enhancing head dry-down but should not be applied before the back of the sunflower head turns yellow and the bracts are brown and dry. The bract tips turn brown at 40-50% seed moisture which is still too high for desiccation. Proper timing is when most of the bracts have turned brown. At this stage the plant is physiologically mature and seed moisture will be 20 to 50 percent. Refer to the current Guide to Crop Protection for details on desiccation products.

Combining

Sunflowers can be combined when the seed moisture is below 20 percent. Harvesting when seed moisture is greater than 20 percent can result in scuffing during harvesting and shrinkage during drying. It would be preferable to combine seeds at 10 to 13 percent moisture. Sunflowers can easily shatter if heads are very dry, and therefore combine speed must be slowed accordingly. Cylinder speeds range from 300-500 (rpm), with concave settings quite open (one inch in front and $\frac{3}{4}$ inch in rear) to minimize seed breakage and dehulling. Using the slowest cylinder speeds with the largest opening will result in the least seed damage.

Harvesting Attachments

Combines that are suitable for harvesting small grains will be adequate to harvest sunflowers. A proper header attachment is necessary to reduce shattering losses and harvest efficiency.