

Resources

For more information on windrowing, refer to the windrowing with MacDon presentation found at www.macdon.com/support, additional product documents.

For copies of the quick cards, they can be found at www.macdon.com/support.

Header Models:

- A40D/A40DX
- D1
- D1XD1XL
- D2
- R113/R116 SP
- R216

Windrower models

- M1170
- M1170NT
- M1240
- M2170
- M2170NT
- M2260

Tractor Attachments:

- TM100
- R113/R116 Pull Type

Windrowing Application Quick Card

MacDon®

The term swath is used for crops that are cut and laid on the ground in a broad strip without being conditioned.

The term windrow is used for crops that are cut and laid on the ground in a narrow strip with or without being conditioned.

Why to Windrow

Eliminating Pre-Harvest Chemical Applications

- By windrowing crops to trigger the dry-down process, pre-harvest chemical applications are eliminated.
- With farmers facing increased consumer and regulatory pressure, particularly around the pre-harvest use of glyphosate, windrowing provides a viable option to manage harvest timing without chemical use.

Reduced Losses

- Windrowing at the right time reduces the amount of seed loss compared to leaving the crop standing until most of the seeds ripen.
- This is due to the fact that when crops are swathed all the seeds start ripening at the same time and rate because they are no longer being fed nutrients from the ground.
- When left standing, the crop ripens inconsistently across the height of the plant leaving a situation where some seeds are overly dry, and some have a high moisture content.

Seed Quality

- Windrowing timing affects the quality of the seeds. Once a crop is swathed, the seeds do not continue to fill.
- Seed that is swathed before accumulating its full potential of oil and protein will not gain anymore after swathing, which can cause potential loss.
- If timed right, the oil and protein content can be maximized.

Even Crop Ripening

- When crop matures unevenly due to hilly terrain, climate, staggered seeding, or uneven germination, crop cut by the windrower will continue to ripen in the windrow, evening out as it dries down to the correct moisture content. This helps improve grain quality and can even eliminate the requirement to dry grain after harvest.
- With crop dried out in a windrow, combines can run at a higher ground speed. This improves efficiency of the combine and allows for a quicker harvest.

Weed Control

- Weeds can often reach maturity and produce seeds at the same time the crop is going into the final stages of maturity.
- Windrowing a crop before final maturity can cut weeds before they have a chance to produce seeds, helping reduce weed pressure for the subsequent season.
- Windrowed weeds will also dry out, reducing the amount of green weed material going through the combine.

Managing Harvest Timing

- Windrowing can begin much earlier than direct cutting, helping spread out the harvest. The cutting of the crop is an instant action, resulting in a faster time to dry down compared to waiting for a pre-harvest desiccant to take effect.

Weather

- Weather can be a big factor in terms of deciding to windrow or not.
- Heavy rain and windstorms pose a risk of standing crop not drying and sprouting, but also pose a risk to windrowed crop.
- Generally, if hail is expected the safer option is to windrow the crop as it is less likely to damage the seed/pods.

Which equipment to use

- A windrower with a header set up for the crop you will be cutting.
 - A swath Compressor (optional)
 - A combine with a pick-up header
- or
- A Tractor and tractor mount with a header set up for the crop you will be cutting.
 - Combine with a pick-up header.

When to Windrow

Crop Moisture Content

- Pod crops such as Canola/Lentils/Beans/Peas can be tested by counting seeds that turn green to yellow/brown.
- Cereals such as Wheat/Oats/Barley/Rye can be dented with fingers to predict moisture content.

Assess Crop Colour Change

- Take plants from several locations in the field, including the most ripe and least mature sections (typically lower and higher areas). This will help get an accurate estimate of the overall maturity.
- Take seeds from the lower, middle and upper portions of the stem. Once all the samples are collected, average out the seed change colour for that field.
- Continue inspecting the field until desired seed change colour

Wheat

- Ready to be windrowed at or just after physiological maturity, this is when the head and stem lose their green colour.
- Benefits of windrowing wheat include having an earlier harvest as there is no waiting for the wheat to mature naturally.
- Considerations cutting wheat before it is mature include increased yield loss, test weight losses and green kernels in grain.

Oats

- Oats should be windrowed when the moisture content is below 35% and with crops yielding at least 30bu/ac (2t/ha).
- Consider windrowing oats when the climate doesn't allow for rapid drying naturally or the crop is uneven in maturity.

Barley

- Barley should be windrowed when the moisture is below 30% or when the kernel is difficult to dent with a fingernail. Its ready to be combined when the moisture content is around 16-18%. It will need to be dried to a moisture content around 12% before storage.

Rye

- Rye should be windrowed when the moisture content reaches a moisture content around 40-50%. It should be windrowed 45° to the direction of seeding, to allow the windrow to sit on stubble. Combine when the moisture content is around 13-14%.

Triticale

- Triticale should be windrowed when the moisture content is at 35% or less. If a drying facility is available, the crop can be combined with a moisture content of around 20%. It can also be combined when the moisture content is at or below 14% and is safe for storage.
- Consideration of windrowing triticale at the correct moisture content is that it does not affect the yield or quality.

Canola

- Canola is ready to be windrowed when 50-60% of the seeds have changed from green to yellow/brown and can be combined when the seed moisture content is around 10%.
- Considerations include having to windrow at the correct time. Canola yield can be reduced by up to 30% by windrowing before recommended.

When to Windrow (continued)

Flax

- Flax should be windrowed when 75% of the seeds have changed colour from green to yellow/brown. Flax should be kept in a windrow for 2-3 days or until the windrow is around 10% moisture.
- Flax is a bushy crop so it is recommended to roll/compress the windrow into the stubble to prevent the windrow from moving in strong winds.
- There can be shatter losses when harvesting dry crop so it is beneficial to combine the crop earlier if a drying facility is available.

Edible Beans

- Edible beans are ready to be windrowed when 75% of the beans have changed color or a moisture content below 30%. The pods can be left to dry and can be combined when the pods moisture content is around 16-18%.
- It is beneficial to windrow in heavy dew conditions to reduce pod shatter and crop loss from pods hanging close to the ground.
- Considerations when windrowing are that bean windrows are susceptible to wind damage and rotting, if the windrows get wet.

Grass Seed

- Grass Seed is ready to be windrowed when 75% of the seeds have matured to medium dough stage or when the moisture content average of the head is 35-50%. Grass seed can be combined when the moisture content is around 13-14%. It should then be dried down to 8-12% for safe storage.
- Considerations include wind damage, rain or hail damage delaying harvest or causing shatter, and more weed seed contamination.
- Harvest in heavy dew or wet conditions to reduce seed loss.

Soybeans

- Soybeans are ready to be windrowed at 35% moisture content. They can be combined when moisture content is at 20%, if proper drying facilities are available, otherwise combine them at 13% moisture content.
- Normally straight cut but it is possible to windrow soybeans. Windrow the soybeans in heavy dew conditions or at night. Combine them shortly after windrowing to avoid seed loss.
- Consideration is that soybeans are easily damaged by precipitation, if left in windrows to long.

Lentils

- Lentils are ready to be windrowed when the bottom third of pods have turned yellow/brown and rattle when shaken. Combine the lentils around 1 week after windrowing them.
- Windrow in damp/dewy/high humidity conditions to reduce pod shatter, it is also recommended to lay a wide windrow.

Peas

- Peas are ready to be windrowed when 70% of the seeds have changed color. They are ready to be combined when the moisture content is around 18-20%. Peas can be stored around 16% moisture content.

Mustard Seed

- Mustard Seeds should be windrowed when at least 75% of the seeds have turned yellow. They are ready to be combined when the seeds have a moisture content is around 9%.
- Consideration about windrowing too early as mustard does not ripen in the windrow. If windrowed to early there can be an excessive amount of green seeds.

Amaranth

- Amaranth should be windrowed when the moisture content is around 35%. It can be combined when the moisture content is around 12-13%.

Silage

- When windrowing silage ahead of a forage harvester, an even presentation of the crop will ensure consistent chop length.