



Canola

Windrow on Time, Reap the Reward\$

This guide will help determine optimal windrow timing.

Windrowing on time maximises income, avoiding losses due to windrowing canola too early.

Crops should be windrowed when 60–80% of seed sampled from the middle third of main stem and branches has changed colour from green to red, brown or black.

The Essentials

- ◆ **All varieties should be assessed and treated the same way**
- ◆ **Seed colour change** is when a minimum of two-thirds (approx. 67%) of the surface of an individual seed has changed colour from green to red, brown or black.
- ◆ **Region affects the speed of maturity and seed colour change**
Canola in QLD, northern NSW and northern WA cropping zones will mature much quicker than in southern NSW, VIC, SA and southern WA.
- ◆ **Sampling location must be carefully considered**
Crop maturity within a paddock is affected by many factors such as topography, soil type, crop nutrition and plant population. Both the least mature and most mature parts of the paddock need to be considered and assessed when determining windrow timing. Technology such as satellite and NDVI images can be used when identifying suitable sampling locations.

Sampling protocol

1. Sampling locations

Identify five sampling locations in the paddock

2. Collect pods

Go to sampling **Location 1**

Collect one pod from the **middle third of a main stem** (not top or bottom) and three pods from the **middle third of the branches** of the same plant

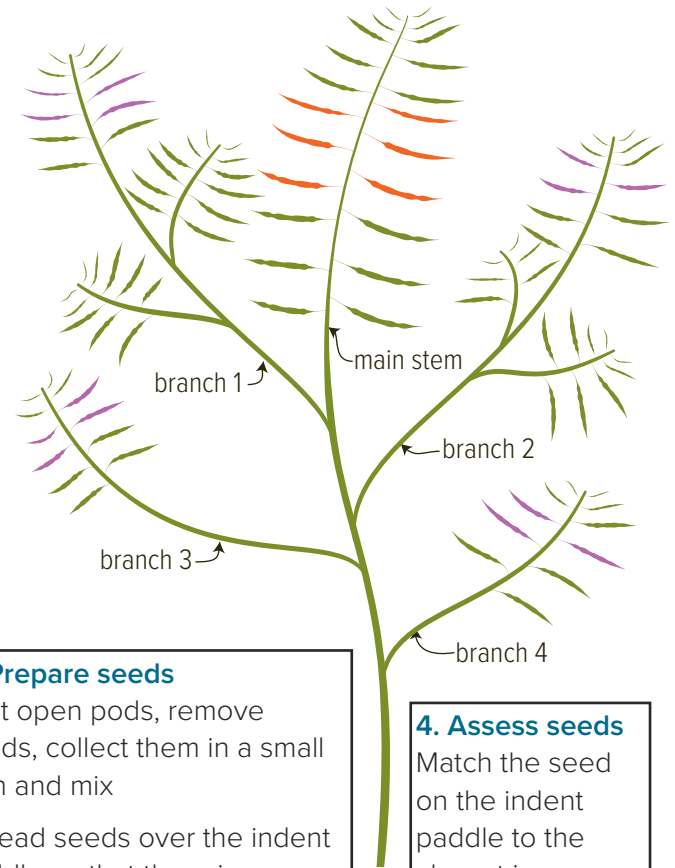
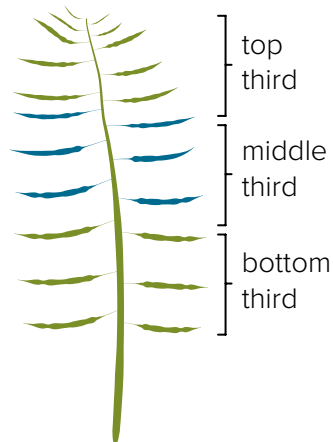
Walk two steps and repeat – one pod from a **main stem** and three from the **branches**

Repeat until you have 20 pods

Move to sampling **Location 2** and collect another 20 pods as above

All pods from each location can be mixed

Repeat at **Location 3, 4 and 5** until you have 100 pods



3. Prepare seeds

Split open pods, remove seeds, collect them in a small dish and mix

Spread seeds over the indent paddle so that there is one seed in each hole

4. Assess seeds

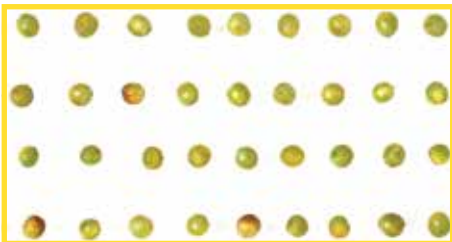
Match the seed on the indent paddle to the closest image (following pages)

TOO EARLY TO WINDROW

no colour change

Check again in 4 to 6 days

Yield	▼ 40–60%
Oil	▼ 6–8 percentage points



10% colour change

Check again in 3 to 4 days

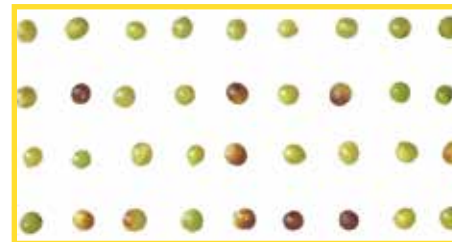
Yield	▼ 30–40%
Oil	▼ 4–5 percentage points



20% colour change

Check again in 3 to 4 days

Yield	▼ 20–30%
Oil	▼ 3–4 percentage points



TOO EARLY TO WINDROW

30% colour change

Check again in 3 to 4 days

Yield

▼ 15–20%

Oil

▼ 2–3 percentage points



40% colour change

Check again in 2 to 3 days

Yield

▼ 10–15%

Oil

▼ 1–2 percentage points



50% colour change

Check again in 1 to 2 days

Yield

▼ 5–10%

Oil

▼ ~1 percentage points



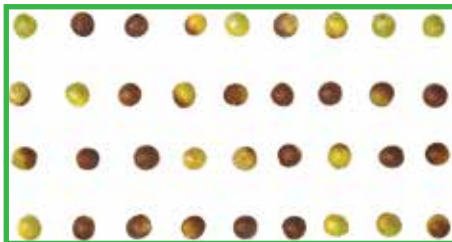
BEST TIME TO WINDROW

60% colour change

Windrow in 2 to 3 days

Yield	▼ less than 5%
-------	----------------

Oil	▼ less than 1 percent. points
-----	-------------------------------



70% colour change

Windrow in 1 to 2 days

Yield	optimum
-------	---------

Oil	optimum
-----	---------

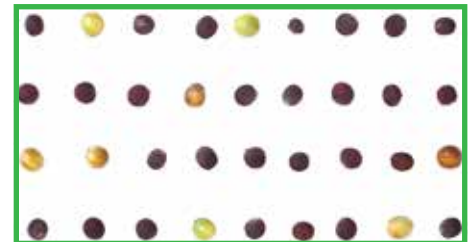


80% colour change

Windrow ASAP

Yield	optimum
-------	---------

Oil	optimum
-----	---------



Harvest as soon as seed moisture content reaches 8%

- ◆ Seed size declines if harvest is delayed
- ◆ Whole pods can break off and be lost if harvest is delayed
- ◆ Unharvested mature crops are at risk of yield loss from pod drop and shattering due to wind and hail

TOO LATE TO WINDROW

90% colour change

Direct head

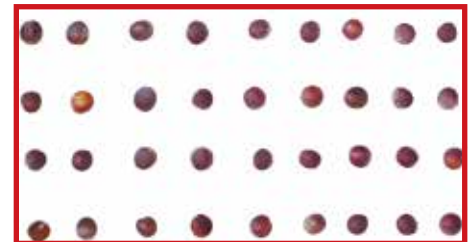
Yield	▼ less than 5%
Oil	▼ 0–0.2 percentage points



100% colour change

Direct head

Yield	▼ less than 10%
Oil	▼ 0–0.5 percentage points



Branches vs main stem

- ◆ 75% of grain yield is contributed by branches
- ◆ Seed colour change starts later on branches than main stem
- ◆ Using the main stem only for windrowing decisions will overestimate seed colour change across the whole plant and indicate to windrow too early
- ◆ Windrowing too early results in smaller seed at harvest, lower yield and lower oil concentration

PLACE INDENT PADDLE HERE



Yield, oil concentration and price matrix

Yield	1.0 t/ha*			less 5% yield*			less 10% yield*		
Price (\$/t)	500	600	700	500	600	700	500	600	700
Oil (%)	Gross income per tonne (\$)								
36	455	546	637	432	519	605	410	491	573
38	470	564	658	447	536	625	423	508	592
40	485	582	679	461	553	645	437	524	611
42	500	600	700	475	570	665	450	540	630
44	515	618	721	489	587	685	464	556	649
46	530	636	742	504	604	705	477	572	668
48	545	654	763	518	621	725	491	589	687

* multiply the price by your estimated yield to obtain \$/ha

Example 1:

Yield 2 t/ha, oil 44%, price \$700/t

Windrow at 80% seed colour change

Gross income **\$721/t** \$1442/ha

Windrow at 50% seed colour change

Yield reduction 5% (yield 1.9 t/ha)

Oil reduction 1 percentage point
(43%)

Gross income **\$675/t** \$1283/ha

Loss of income = \$159/ha

Example 2:

Yield 2.5 t/ha, oil 42%, price \$550/t

Windrow at 70% seed colour change

Gross income **\$700/t** \$1750/ha

Windrow at 40% seed colour change

Yield reduction 10% (yield 2.25 t/ha)

Oil reduction 2 percentage points
(40%)

Gross income **\$611/t** \$1375/ha

Loss of income = \$375/ha



Department of
Primary Industries



Research conducted by NSW DPI in northern NSW at Tamworth, Trangie and Narrabri, as part of the *Optimised Canola Profitability* project (CSP00187; 2014–19); a collaboration between CSIRO, NSW DPI and GRDC.

© Grains Research and Development Corporation August 2021

Disclaimer: This publication has been prepared in good faith on the basis of information available at the date of publication. Neither the Grains Research and Development Corporation or other participating organisations guarantee or warrant the accuracy, reliability, completeness or currency of information in this publication nor its usefulness in achieving any purpose. Readers are responsible for assessing the relevance and accuracy of the content of this publication. Neither the Grains Research and Development Corporation or other participating organisations will be liable for any loss, damage, cost or expense incurred or arising by reason of any person using or relying on the information in this publication.