

Intervention Guide

This guide provides information on how the available 'Interventions' in the SustainConnect 2024 program can be implemented. The SustainConnect 2024 program aims to verify the best way to achieve on-farm GHG reductions in Australian canola crops.

Participating canola growers must implement one or more of the interventions described below to grow their 2024 canola crop. The selected intervention(s) must not have been implemented in the previous canola crops grown in enrolled paddocks during the baseline period. This will ensure that the new intervention(s) meet 'Causality' and 'Additionality' requirements and genuinely reduce greenhouse emissions.

This resource provides an overview of the interventions and how they may be implemented as part of the SustainConnect 2024 program. We suggest getting advice from your agronomist when choosing the intervention(s) you intend to implement.

Please contact sustainconnect@cargill.com if you have any questions about the eligibility or specific requirements of any of these interventions.



Available Interventions



No Till



Reduced Till



Cover Crops



Incorporate Legumes



Stubble Retention



Organic N Substitution



Variable/Reduced Rate



Split Application



Soil Tillage Practices



No Till

No Tillage implemented as an intervention in the SustainConnect 2024 program requires that tillage events should not be conducted except at planting or when conducting low disturbance nutrient passes. Tillage depth should remain between 0-3 cm. In addition to the many benefits no till has on soils (improved soil structure, soil fertility, water holding capacity, improved microbial ecosystems, etc.), no tillage also reduces loss of CO₂ and CH₄ from the soil.



No Till



To be eligible for the **No Till** intervention, the following criteria must be met;

- Reduced the tillage intensity associated with the canola crop & increased the residue remaining
- 60-100% of the residue should remain on the paddock
- 0-3cm tillage depth
- Soil disturbance only occurs at planting and when conducting low disturbance nutrient passes

Am I eligible for No Till if I conducted no tillage on **non-canola years** in my baseline, but reduced on my canola?

✓ Yes - You eligible for *No Till*

Am I eligible for No Till if I conducted No tillage on my canola year in my baseline?

✗ No - You are not eligible



Reduced Till

Reduced Tillage implemented as an intervention in the SustainConnect 2024 program involves reducing the intensity of tillage events associated with the canola crop via an increase of % residue remaining on the soil surface. Within the SustainConnect program reduced tillage means 30-60% of residue should remain on the paddock. To achieve reduced till, tillage events should be conducted to a depth between 4-11 cm and majority of residue should be left on the paddock. In addition to the many benefits reduced tillage has on soils (improved soils structure, soil fertility, water holding capacity, improved microbial ecosystems, etc.), reduced tillage also reduced loss of CO₂ from the soil through Soil Organic Carbon (SOC) gains.



Reduced Till



To be eligible for the **Reduced Till** intervention, the following criteria must be met;

- Reduced the tillage intensity associated with the canola crop & increased the residue remaining
- 30-60% of the residue should remain on the paddock
- 0-11 cm tillage depth
- No Soil Inversion

Am I eligible for Reduced Till if I conducted reduced tillage on **non-canola years** in my baseline, but conventional on my canola?

✓ Yes - You eligible for *Reduced Till*

Am I eligible for Reduced Till if I conducted reduced tillage on my canola year in my baseline?

✗ No - You are not eligible



Building Soil Organic Matter



Cover Crops

Cover Crops implemented as an intervention in the SustainConnect 2024 program involves converting what would have been fallow paddocks into cropping paddocks after canola has been harvested. Cover cropping will support SOC increases due to increased photosynthesis. The cover crop can be any crop type from the following list and cannot be used as a commodity or harvested and taken off the paddock: Barley, Corn, Cotton, Flax, Millet, Oats, Rice, Rye, Sorghum, Sunflowers, Triticale, Wheat, Buckwheat, Radishes, Turnips.



Cover Crops



To be eligible for the **Cover cropping** intervention, the following criteria must be met;

- converting what would have been fallow paddocks into sown paddocks **after** canola has been harvested
- cover crop **cannot be used as a commodity** or harvested and taken off the paddock
- cover crop species must be one of the following crops; Barley, Corn, Cotton, Flax, Millet, Oats, Rice, Rye, Sorghum, Sunflowers, Triticale, Wheat, Buckwheat, Radishes, Turnips.

If you don't see your desired crop type consult with your program representative. For legumes crop types see the "incorporate legumes" intervention.

Am I eligible for *Cover Cropping* if there was a cover crop planted **after non-canola** crops in the baseline period?

✓ Yes - You are eligible for *Cover Cropping*

Am I eligible for *Cover Cropping* if there was a cover crop planted **before canola** in the baseline period?

✓ Yes - You are eligible for *Cover Cropping*

Am I eligible for *Cover Cropping* if there was a cover planted **after canola** in the baseline period?

✗ No - You are not eligible for cover cropping. However, you may be eligible for Legume Incorporation



Incorporate Legumes

Incorporate Legumes implemented as an intervention in the SustainConnect 2024 program involves incorporating legumes into your crop rotations either by double cropping or after canola has been harvested where a non-legume cover crop or fallow would have occurred in the baseline period. The legume species can be one of the following and cannot be used as a commodity or harvested and taken off the paddock. The aim of this intervention is to increase nitrogen availability in the soil through the nitrogen fixing capability of legumes. There is also opportunity to implement this intervention in-conjunction with the Nitrogen Fertiliser Substitution intervention to supplement any reductions in N applications made during the canola season, providing a SOC increase and N₂O reduction. Legumes you can select from include: Clover, Dry bean, Lentil, Pea, Soybean, Alfalfa, Peanuts, Vetch, Lupin, Fava beans. If you don't see your desired legume type consult with your program representative.



Legume Incorporation



To be eligible for the **Legume Incorporation** intervention, the following criteria must be met;

- Planted a legume cover crop **following** a canola crop
- Must not be harvested as a commodity

Am I eligible for Legume Incorporation if I planted a non-legume cover crop in my baseline following canola?

✓ Yes - If you now are incorporating legumes

Am I eligible for Legume Incorporation if I plant it before my canola crop?

✗ No - the legume incorporation must occur following the canola crop



Stubble Retention

Stubble Retention implemented as an intervention in the SustainConnect 2024 program involves retaining at least 50% of canola crop stubble on the paddock after harvest until the next crop is sown rather than burning or removing. The aim of this intervention is to increase SOC through returning organic matter and nutrients to the soil, promoting plant health and soil life. This means, the stubble retention intervention removes CO₂ from the atmosphere and stores it in the soil as SOC.



Stubble Retention



To be eligible for the **Stubble Retention** intervention, the following criteria must be met;

- More than 60% canola stubble remains on the paddock after canola harvest until the next crop has been sown
- Baseline canola stubble was removed/baled, burnt or grazed

Am I eligible for *Stubble Retention* if I previously grazed my stubble, but now at least 60% my stubble will remain on the paddock?

✓ Yes - you are eligible

Am I eligible for *Stubble Retention* if I previously baled 100% of my stubble but now intend to graze 60% of my 2024 canola stubble?

✗ No - you are not eligible

Nutrient Management

Nutrient management involves optimising the application of nitrogen (N) applied to the canola crop compared to the previous canola crop (baseline year). There are various Nutrient Management interventions to select from. Optimising N application can create significant N₂O emission reductions through reduced volatilisation/denitrification processes and is expected to be the intervention with highest GHG reduction impact. It is important to implement a nitrogen optimisation approach that suits you and a discussion with your agronomist may be useful.

Note: in terms of the following Nutrient Management Interventions, pre-planting applications of fertiliser and manure that occur between last year's harvest and before 1 April (i.e. outside of the 2024 reporting year) **will be attributed** to the 2024 Canola crop.

F

Fertilizer substitution

Nutrient management via **Nitrogen Fertiliser Substitution** implemented as reducing total synthetic N applied to the canola crop by substituting with a non-synthetic fertiliser (organic fertiliser). Non-synthetic nitrogen fertilisers available as part of the program include: chicken manure, cow manure, sheep manure, fish-based, and seaweed-based.



Organic Nitrogen Substitution



To be eligible for the **Organic Nitrogen Substitution** intervention, the following criteria must be met;

- Replaced synthetic nitrogen applications with organic substitutions by at least 5%

Am I eligible for Organic Nitrogen substitutions if I used organic amendments on my non-canola in my baseline?

✓ Yes - If you are increasing your organic usage on canola by >5%

Am I eligible for Organic Nitrogen Substitution if I used it on my canola in my baseline?

✗ No - If you have not replaced non-synthetic fertilisers by more than 5%

VR Variable/Reduced Rate

Nutrient management via Rate Reduction of nitrogenous fertilisers involves:

- Reducing total N applied to the canola crop compared to the total baseline canola application via optimising a **flat rate application**.
- Reducing total N applied to the canola crop compared to the total baseline canola application via optimising a **variable rate application**, which is expected to optimise N application to match crop demand.

To qualify for this intervention the average N applied to the enrolled paddock must reduce by > 5% compared to previous canola crops.



R Variable Rate/Rate reduction



To be eligible for the **Variable Rate / Rate Reduction** intervention, the following criteria must be met;

- Reduced total N applied to the canola crop compared to the total amount of N applied baseline canola application by 5%
- If two canola years have been provided in the baseline, 80 kg/ha in 2020 and 90 kg/ha in 2022, to implement Rate Reduction, nitrogen must be applied to the 2024 canola crop at a total rate of at least 76 kg/ha or less (5% lower than the lowest total N amount applied to canola). Yield does not impact how much N can be applied for this intervention.

Am I eligible for Rate reduction if I implemented a variable rate approach during my **canola years** in the baseline?

- ✓ Yes - If your total N amount applied to canola reduces by 5%

Am I eligible for Rate reduction if I implemented a variable rate approach during my **non-canola** years in the baseline?

- ✓ Yes - If your total N amount applied to canola reduces by 5%

Am I eligible for rate reduction if I adopt variable rate applications but my N amount stays the same?

- ✗ No - You are not eligible

S Split Application

Nutrient management via **Split Application** involves applying equal or reduced total N rate compared to the baseline canola application, applied in multiple smaller events instead of one or two large applications with higher N rate (logic is to optimise Nitrogen Utilisation Efficiency (NUE) by matching the timing of each split application with crop stages and N-demand).

S Split Rate application



To be eligible for the **Split Rate Application** intervention, the following criteria must be met;

- Increased frequency of N applications in the canola year, compared to baseline canola
- Total N applied does not exceed total (maximum) N applied to canola years in the baseline period.
- If two canola years have been provided in the baseline, 80 kg/ha in 2020 and 90 kg/ha in 2022, to implement Split Rate Application nitrogen must be applied to the 2024 canola crop at a total rate of 90 kg/ha or less. Yield does not impact how much N can be applied for this intervention.

Am I eligible for Split Rate application if I applied smaller amounts, more frequently?

- ✓ Yes - If your total N amount does not exceed the baseline

Am I eligible for split rate application if I adopt split rate applications but my total N amount increases?

- ✗ No - You are not eligible

