

## Tips for Growing High Yielding Canola

### Key Points

- A plant population of 5-8 plants/ft<sup>2</sup> balances economics and reduces risks from pests, weeds, and uneven maturity.
- Select hybrids with strong disease resistance, appropriate maturity for your region, and enhanced pod shatter performance where straight cut harvesting is a possibility.
- In a comprehensive crop rotation, it is recommended to alternate between herbicide systems to manage herbicide resistant weeds as well as volunteer canola.

### Aiming for 60 bu/acre

- Achieving a 60 bu/acre canola crop is an ambitious but attainable goal for Canadian growers committed to best management practices.
- Success depends on making informed decisions at every stage—from hybrid selection and fertility planning to pest management and harvest timing.
- By combining strong genetics with precise agronomy and careful record keeping, you can maximize canola yield potential and profitability.
- The following guidelines outline key steps and considerations to help you achieve top-end canola yields and profitability on your farm.

### 1. Plant Population and Seeding Practices

- **Target 5-8 plants per square foot** for optimal yield potential. This range balances economics and reduces risks from pests, weeds, and uneven maturity. Lower populations (<5 plants/ft<sup>2</sup>) make crops vulnerable to stress and delay maturity.
- **Uniform emergence** is critical. Ensure proper seeding depth (1/2-1 inch), consistent seed placement, and aim for ~4 mph seeding speed to ensure adequate furrow closure and seed/soil contact.
- **Avoid canola-on-canola stubble**; yields may drop significantly (~10-20% yield difference<sup>1</sup>) when seeded into canola stubble versus cereal stubble.

### 2. Hybrid Selection and Traits

- Select hybrids with strong disease resistance (blackleg, clubroot, sclerotinia, verticillium), appropriate maturity for your region, and enhanced pod shatter performance where straight cut harvesting is a possibility.
- Pioneer's **Pod Shatter Premium Technology** brings confidence to straight-cut harvesting, enables harvest management decision flexibility and superior yield potential.



- Pioneer's internal trials showcase high yielding hybrid options for broad Western Canada adaptation, complemented by early/mid/late maturity options and disease protection against blackleg, clubroot, sclerotinia, and verticillium stripe.
- Pioneer hybrids support a multi-hybrid strategy to mitigate risk and optimize yield and profitability across Western Canada.<sup>2</sup>

### 3. Nutrient Management

- Canola is a high-value crop with significant nutrient demands, particularly nitrogen, phosphorus, potassium, and sulfur.
- Applying the 4R principles—Right Source, Right Rate, Right Time, and Right Place—ensures nutrients are used efficiently, supporting optimal yield and oil quality while minimizing environmental impact.
- Proper nutrient management reduces losses to air and water, improves soil health, and maximizes return on investment.
- Table 1 shows the recommended canola fertilizer guidelines.
- Micronutrients are equally important to the success of a high producing crop and should be factored into fertility recommendations.

**Table 1.** Canola nutrient uptake targets for a 60 bu/acre crop.<sup>4</sup>

Nutrient	Uptake per Bushel (lbs)	Target for 60 bu/acre (lbs/acre)
Nitrogen (N)	~2.38	~143
Phosphorus (P)	~0.90	~54
Potassium (K)	~2.93	~176
Sulfur (S)	~0.86	~52

- Adjustments based on soil test results and other factors such as nutrient placement/timing/source/method, should always be factored into a successful fertility program.
- Consult with your local agronomist or fertilizer supplier on a soil testing plan and nutrient recommendations for your farm.

#### 4. Pest and Disease Management

- Western Canadian canola crops may experience flea beetle, sclerotinia, blackleg, and verticillium stripe infections on a yearly basis.
- Clubroot, as well as insects such as cutworms, diamondback moth, and others may also cause yield reductions if present.
- Use disease resistant hybrids and seed treatments as part of an effective management plan. Consider a 1 in 3- or 4-year canola crop rotation to increase yield and profitability expectations for all phases of the crop rotation.<sup>5</sup>
- Manage volunteer canola aggressively; it hosts diseases and competes for nutrients.
- Harvest losses can add ~1.3 bu/acre of seed to the seedbank, persisting for years.<sup>6</sup> Ensure effective harvest management practices are followed (e.g., combine settings, harvest timing, etc.). In a comprehensive crop rotation it is recommended to alternate between herbicide systems.



#### 5. Harvest Timing and Method

- **Swathing at 60-70% (or later) seed colour change** optimizes yield and quality if crop staging is uneven or frost risk is high. It is a preferred harvest management method to even out harvest risk during a challenging fall.
- Pioneer field-scale trials show that canola swaths can be harvest ready as much as 6-7 days sooner than straight cut in the same field.
- **Straight-cutting** canola at ~10% seed moisture often delivers efficiency in manpower and equipment costs but comes with risk associated with challenging environmental conditions that could result in pod shatter and/or drop, thereby reducing overall yield and profitability.
- Factor in the cost of desiccation when comparing straight-cut vs swathing on your farm. Avoid harvest delays beyond 90% SCC or 10% seed moisture content to minimize shatter losses.



#### 6. Environmental and Management Factors

- Include both Optimum® GLY and LibertyLink® traited canola on your farm as an effective way to manage herbicide resistant weeds as well as volunteer canola.
- Maximize soil moisture retention through residue management and reduced tillage.
- Manage weeds early to reduce yield robbing competition.
- Consider a multi-hybrid approach for disease-prone or early-maturity zones.

#### Quick Checklist for Western Canada

- Uniform established stand: 5-8 plants/ft<sup>2</sup>
- High yielding hybrids with appropriate shatter tolerance and strong disease protection
- Balanced and adequate fertility (N, P, K and S) to achieve target yield
- Disease and pest scouting
- Timely harvest (straight cut or swath based on conditions and management plan)

#### Sources

<sup>1</sup><https://www.canolacouncil.org/canola-encyclopedia/field-characteristics/crop-rotation/>

<sup>2</sup><https://www.pioneer.com/ca-en/product-catalog/crop-canola.html>

<sup>3</sup><https://www.canolacouncil.org/canola-encyclopedia/4r-nutrient-stewardship-practices/>

<sup>4</sup><https://www.canolacouncil.org/canola-watch/fundamentals/how-much-fertilizer-does-canola-need/>

<sup>5</sup><https://cdnsiencepub.com/doi/full/10.1139/cjps-2017-0292>

<sup>6</sup><https://canadianagronomist.ca/canola-harvest-losses-can-be-high/>



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