

# Avoiding and Managing

# Volunteer Canola



Volunteer canola plants can have a serious negative impact on the success of Certified canola seed production and result in costly roguing bills or rejected seed crops.

Maintaining the genetic purity of the canola variety being produced is an important part of the seed growers responsibility. As the canola market expands and the number of herbicide-tolerance traits, specialty-oil traits, etc. increases, the job of maintaining variety purity in seed production becomes more challenging and deserves a renewed discussion.

By Canadian Seed Growers Association standards the maximum level of volunteer canola plants in the seed production year must be below 1.5 per 10,000 plants. A single healthy volunteer canola plant can easily produce over 500 seeds. Since a single plant can produce such a large number of seeds, the best way to reduce future problems is to control 100% of volunteer plants.

## What is a Volunteer?

A volunteer is a canola plant that grows from the seed of a previous crop or that has been introduced to the field thru equipment, irrigation, wind or other. The volunteer will compete for crop nutrients and may cross pollinate with a neighboring seed production field resulting in the adventitious presence of unwanted genetic material in the canola seed crop. Many agronomic practices exist to effectively control volunteer canola and these practices will significantly reduce the amount of viable canola seed within the soil seed bank.

## Negative Impact\$

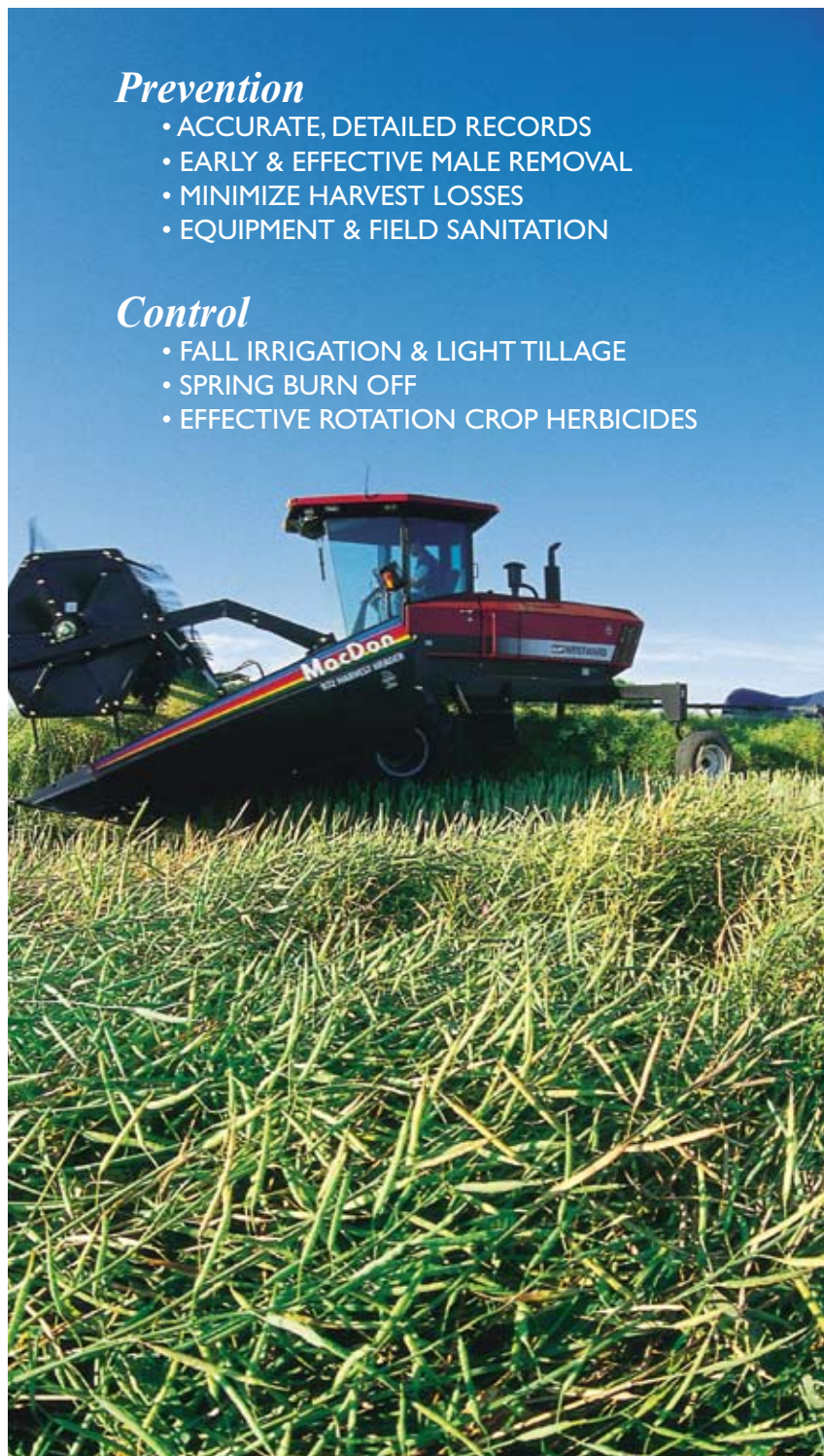
Volunteer plants can introduce unwanted traits into a seed crop through genetic cross pollination and physical seed contamination. This can result in rejection of the seed crop and significant economic loss to the seed grower and the seed company. Also, past and future persistence of de-registered varieties\* could have significant negative consequences for commercial export markets if not effectively managed.

## Prevention

- ACCURATE, DETAILED RECORDS
- EARLY & EFFECTIVE MALE REMOVAL
- MINIMIZE HARVEST LOSSES
- EQUIPMENT & FIELD SANITATION

## Control

- FALL IRRIGATION & LIGHT TILLAGE
- SPRING BURN OFF
- EFFECTIVE ROTATION CROP HERBICIDES



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# Management Checklist

## RECORD KEEPING

A comprehensive plan to control volunteer canola begins in the year of seed production. Keep detailed records of the type of canola planted in each field, herbicide tolerance, specialty oil, contracting company, etc. In years when canola is not grown, records of canola volunteer levels, areas of greater occurrence and effectiveness of control should be noted. Good records are essential in planning rotation requirements for future seed crops and for planning proper chemical control of herbicide-tolerant canola volunteers.

## MALE REMOVAL (hybrid seed production)

Agronomic practices to minimize the amount of seed added to the soil seed bank in the year of production include planning for R-line (male) destruction immediately following flowering, as soon as the female is finished flowering or the male, whichever comes first. This will help prevent the R-line from producing viable seed. R-line seed that is allowed to mature, and is not adequately destroyed or removed will add significant quantities of seed to the soil seed bank.

## HARVEST

Harvesting operations have been shown to return large amounts of seed to the soil surface. Manage the timing of swathing to prevent pod shatter and loss of canola seed. During harvest monitor the combine settings to reduce the amount of seed returned to the soil. Make special note in field records any time a larger than expected amount of seed is returned to the soil surface; hail, swath shattering, combine loss.

## PROMOTING FALL GERMINATION – TILLAGE & IRRIGATION

It is important to avoid deep tillage, this can significantly prolong the period of time before seeds will germinate, thereby creating greater problems in future crops. When tillage is conducted a shallow tillage operation is recommended. A heavy harrow operation after harvest will break open un-threshed pods and help increase the rate of germination. Irrigation, if available, should be used as it will also help increase the rate of germination.

## CROP ROTATION & HERBICIDES

Pre-seed herbicide applications should involve a broadleaf herbicide that will control canola regardless of the canola herbicide tolerance.

When deciding on the rotation crop to follow canola, ensure there are herbicide options for effective in-crop chemical control of volunteer canola plants regardless of canola herbicide tolerance. Select a herbicide that will be effective in removing the unwanted volunteer canola plants regardless of herbicide tolerance. It is important to spray the volunteer plants early in the spring, the larger they grow the more difficult they are to control. Fields need to be monitored closely to ensure herbicide applications were effective and to check for late flushes of canola. In some situations multiple herbicide applications may be required to adequately control volunteer canola plants.

## COMMITMENT

Diligence is the key to successfully eliminate the contamination risk presented by volunteer canola. In rotation crops any spray misses need to be re-sprayed or hand rogued. Volunteer canola on field edges, roadsides and in adjacent fields must be eliminated by spraying, tillage or roguing. Assuring those plants are not allowed to flower and set seed will help reduce the risk of unwanted cross pollination with canola seed crops and reduce the potential for future volunteer canola problems. Get in the habit of cleaning equipment between fields; augers, seed drills, swathers, combines, grain trucks, this can have a big impact on eliminating the movement of unwanted seeds from field to field.

**Good record keeping, adoption of sound management practices and diligent removal of escaped volunteer plants prior to flowering will save seed growers significant money in the long run. These savings will be realized through improved levels of success when producing a hybrid canola seed crop, avoiding fields that are not suitable and increased opportunities to contract with a seed production company.**

\*Canola Council, Canola Export Ready program; [www.canola-council.org](http://www.canola-council.org)

Reference Material

Canola Council of Canada, 2005, Ecology and Management of Volunteer Canola. [www.canola-council.org](http://www.canola-council.org). 2005

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