



## Potential canola yield losses due to weeds in the billions

CATEGORY [weeds](#) | June 8, 2023

A research review of 89 canola studies found that the potential on-farm monetary loss from uncontrolled weeds in canola was about \$2.21 billion on the Prairies, \$0.16 billion in North Dakota, and \$2.37 billion in both countries combined.

Potential yield and financial losses from weed competition in canola help to inform weed control research, industry investments, and weed management strategies. This is especially important as the prevalence of herbicide-resistant weeds continues to grow.

The objective of this Weed Science Society of America (WSSA) Weed Loss Committee study was to provide an updated estimate of potential yield and monetary losses due to weed interference in spring canola grown in Canada and the United States. These "potential yield losses" are losses if weeds were completely unmanaged in canola production, and not the estimated losses due to the current level of weed control achieved in canola. However, the study highlights the potential impact that weeds could have on canola.

Companies and individuals conducting weed control research in canola were contacted to provide yield data from trials that included weedy and weed-free treatments. Results from published scientific articles were also included. The experiments covered an 18-year period between 2003 and 2020. Overall, 89 yield loss estimates due to weed competition in canola were obtained from Alberta, Saskatchewan, Manitoba, and North Dakota.

## Billions in potential yield losses

Average canola yield losses due to weed competition varied by province/state. Alberta had the highest yield losses estimated at 34.6% for a loss of 72 million bushels, based on average harvested area and average yield. Saskatchewan had an estimated yield loss of 30.2% for a loss of 86 million bushels. Manitoba's estimated yield loss was 18.1%, resulting in a loss of 19 million bushels. North Dakota had an estimated yield loss of 27.9% with 11 million bushels in potential yield loss.

A dollar value for the period was used to calculate monetary losses. It was based on the average farm-gate price for canola using data from the Canola Council of Canada during the 18 year time period, and was \$12.55 per bushel (\$552.31/tonne).

When weighted by canola harvested area, the potential yield loss was 30% for the Canadian Prairies, 28% for North Dakota, and 30% for both Countries combined. This represents a loss of CDN\$2.21 billion in Canada, \$0.16 billion in the U.S., and \$2.37 billion combined.

These potential canola yield losses at 30% are higher than similar studies by the WSSA Weed Loss Committee for spring wheat (20%) and winter wheat, but much lower than those reported for corn (50%), soybean (52%), dry bean (71%), sugar beet (70%), and sorghum (47%).

But, the monetary losses in canola at CDN\$2.37 is higher than spring wheat (US\$1.39 billion), dry bean (US\$0.72 billion), sugar beet (US\$1.27 billion), or sorghum (US \$0.95 billion). These canola losses, though, are much smaller than the potential monetary losses in corn (US\$26.72 billion), or soybean (US\$17.21 billion).

This canola yield loss study highlights the need for on-going research into integrated weed management strategies to help manage herbicide resistant weeds. These strategies include rotation of herbicide resistance traits, mixing or layering multiple effective herbicides sites of action, and timely herbicide applications. Additionally, non-chemical weed management such as crop rotations, planting competitive cultivars, using higher seeding rates, and harvest weed seed control are also important strategies for reducing weed competition in canola.

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Geddes, C., Tidemann, B., Ikley, J., Dille, J., Soltani, N., & Sikkema, P. (2022). Potential spring canola yield losses due to weeds in Canada and the United States. *Weed Technology*, 36(6), 884-890. OPEN ACCESS: <https://doi.org/10.1017/wet.2022.88>