In the early 1950s, farming in Southern Ontario centred on hay, oats, mixed grains, and winter wheat. Corn, grown mainly as a grain feed for livestock, began expanding in the region during the 1960s as a result of earlier-maturing varieties of corn, improvements to planting and harvesting equipment, and the use of atrazine, a herbicide that effectively controls weeds in corn. As Southern Ontario began to adopt the U.S. Midwest corn-based farming system from neighbouring Ohio and Michigan, soybeans (Glycine max) also spread to the warmer regions of the extreme south of Ontario. Prior to 1975, soybeans were grown only in small pockets in the southwestern corner of Ontario, near Windsor. However, soybean production increased dramatically in Ontario between 1976 and 1997, from 153,000 to 937,000 hectares. From 1960 to 2000, the area planted with soybeans in Ontario increased by 900% and soybean yields (soybeans harvested per area of land) increased 71%. This article reviewed the expansion of soybean production in Ontario since 1975.
What did the researchers find?
In the early 1970's, Dr. Harvey Voldeng, a Canadian soybean breeder, developed several new early-maturing varieties of soybean, with improved yield and also more tolerance to midsummer chilling. In the same time period, research at the University of Guelph identified a package of recommendations which resulted in improved yields of soybeans. A grant from the Ontario Soybean Growers Marketing Board (which was a farmer organization and provided money from growers, not the government), together with cooperation from county organizations of the Ontario Soil and Crop Improvement Association, allowed farmers in each county to grow field-scale strips of soybeans as on-farm trial plantings. These trial plantings had relatively high yields, and returned a profit. In cooler parts of Ontario, soybean yields were not only similar to those in the warmer south, but often exceeded returns for corn in the same area. A new cropping system emerged, based on a three year rotation of corn, soybeans, and winter wheat, which required less fertilizer since soybeans produce their own nitrogen. It also required less pesticide, since the corn rootworm, a major pest of corn, could not feed on soybean or winter wheat. This cropping system was also more compatible with the practice of not tilling (plowing) the fields in the fall.

Keywords:
Soybeans, Ontario, farming system, crop rotation, cold tolerance, corn, fertilizers, pesticides

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How can you use this research?
From this research, we have learned that Farmers in regions with soybeans could adapt the process in order to introduce soybeans into even newer regions. Similar processes have occurred in Manitoba and are occurring now in Saskatchewan and Alberta. Government organizations can use this research to understand the factors responsible for changes in crop production and farming systems, and the effects of such changes on the overall agriculture industry in the region or province.

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