

Genetic Engineering

Leads to \$1 Billion

Industry



A field of canola in bloom. (Photos courtesy of the Canola Council of Canada)



An ideal salad oil, canola is naturally "winterized," remaining clear and free-flowing even when refrigerated.

The development of canola, and its rise to becoming a major competitor in world trade in edible oilseeds, is one of the most spectacular success stories in Canadian agricultural research.

Canola was derived from rapeseed, first produced in Canada as a source of marine motor lubricating oil during the Second World War. Originally, rapeseed was unique among oilseeds in that it contained significant amounts of erucic acid and glucosinolates. Because of a belief that erucic acid was not suitable for human consumption, rapeseed's acceptance as an edible oil was limited. So was its use as a high-protein animal food, since many animals shied away from the flavour and aroma of glucosinolates.

The magic of genetic engineering

In 1960, Canadian scientists identified an Argentinian type of rapeseed plant that was low in erucic acid, and developed cultivars, or varieties, from the line. Two years later, a new method made it possible to screen rapeseed for glucosinolate levels. In 1968, Agriculture Canada researchers discovered a low glucosinolate rapeseed strain of Polish origin. Through the magic of genetic engineering, they bred new cultivars that ultimately combined the low glucosinolate trait with the low erucic acid characteristic developed in 1960. The researchers gave the new, Canadian-developed cultivars a more appealing and appropriate name: canola.

Development didn't stop there. The two latest canola cultivars, developed in the early 1980s, are considered superior to any previous rapeseed cultivar