

# Camelina



Camelina is a crop grown in Yuma County that, although currently representing minimal acreage, could have a future here as an oil seed crop. The production of edible oil from crops has enjoyed unremitting growth during the latter part of the 20th century. The trend shows no signs of relenting. And, as the three top oil seed crops (soybean, sunflower and canola) are often not suitable for marginal lands (low moisture, low fertility, or saline soils). There has been increasing interest developing camelina as an oilseed with reduced input requirements and as a crop well suited to marginal soils.

*Camelina sativa* originated in the Mediterranean to Central Asia and is an annual that attains heights of 3 feet and has branched smooth or hairy stems that become woody at maturity. It produces prolific small, pale yellow or greenish-yellow flowers with 4 petals and oblong seed pods that are about one half inch long.

Camelina, a branch of the mustard family, is indigenous to both Europe and Central Asia and hardly a new crop on the scene: archaeological evidence indicates it has been cultivated in Europe for at least three millennia to produce both vegetable oil and animal fodder.

Although camelina is known in North America primarily as a weed, it was known as "gold of pleasure" to ancient European agriculturists. Cultivation probably began in Neolithic times, and by the Iron Age in Europe when the number of crop plants approximately doubled, camelina was commonly used as an oil-supplying plant. Cultivation, as evidenced from carbonized seed, has been shown to occur in regions surrounding the North Sea during the Bronze Age of around 2000 BC.

Camelina declined as a crop during medieval times due to unknown factors, but continued to coevolve as a weed with flax, which probably accounts for its introduction to the Americas.

Like canola oil, camelina oil has been used as industrial oil after the industrial revolution. The seeds have been fed to caged birds, and the straw used for fiber. However, there has been relatively little research conducted on this crop worldwide, and its full agronomic and breeding potential remains largely unexplored.

The pros of the plant include that it doesn't require much rainfall, yields crops double that of soy beans, produces an oil resistant to colder temperatures, and the leftovers after the oil is extracted makes for good livestock feed while producing up to 100 gallons of camelina oil per acre. Although it produces industrial oil, and not food oil, leftovers can be used as an animal feed.

As an alternative energy source, camelina has a high oil content low in saturated fat. A ton of camelina will contain about 800 pounds of oil. Nothing in camelina production is wasted as after processing, the plant's debris can be used for livestock silage. Camelina silage has a particularly attractive concentration of omega-3 fatty acids that make it a particularly fine livestock feed candidate that is just now gaining recognition in the U.S. and Canada.

Camelina seed was found in the stomach of Tollund man, a 4th century mummy recovered from a peat bog in Denmark. Anthropologists postulate that the man's last meal had been a soup made from vegetables and seeds including barley, linseed, camelina, knotweed, bristle grass, and chamomile. The Romans used camelina oil as massage oil, lamp fuel, and cooking oil, as well as the meal for food or feed.

In response to the resurgent interest in oil crops for sustainable biofuel production, many research institutions worldwide are involved in conducting seed trials that include nine different oilseed crops (sunflower, safflower, soybean, rapeseed, mustard, flax, crambe, canola, and camelina). Camelina has emerged from these trials as a promising oilseed crop. Evaluation parameters included input costs, production costs, harvest costs, and yield. Camelina sativa was not always the highest yielding oilseed crop but it was the most economical crop to produce due to minimal input requirements.

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