

# Safflower

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Carthamus tinctorius L. (Asteraceae)

## Fast Facts:

Acres in Washington: 2000 Number of growers: less than 10
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## Description Of crop:

Safflower is a multi-branched thistle-like annual with many long, sharp spines on the leaves. The plant is grown from seed reaching a height of up to 3 feet. Each branch will usually develop 1-5 flower heads containing 15 to 20 seeds per head. Safflower is grown for its yellow-orange flower and its seed. It has a strong taproot, which enables it to thrive in dry climates. It develops a flower head, which tapers upward. The flower is used to color and flavor food and to dye fabrics especially silk. The seed yields valuable food oil. Safflower oil is flavorless and colorless and similar to sunflower oil. It is used mainly as cooking oil, in salad dressings and for the production of margarine. Safflower flowers are sometimes used in cooking as a cheap substitute for saffron. Safflower seed is also used in birdseed, since squirrels don't like its taste. The seeds are borne partially exposed in globular heads and contain 32 to 40 percent oil. The seed coats are fibrous, so seeds are decorticated before pressing or put through expellers to obtain the oil. The press cake is a valuable high protein feed supplement for cattle, sheep and poultry. Most of the oil is used for edible purposes but can also be used for industrial purposes. There are two types of safflower; one that produce oil which is high in monosaturated fatty acids and those with high concentration of polyunsaturated fatty acids. Safflower is ready to harvest when most of the leaves turn a brown color and the stems should be dry. It should be harvested as soon as it matures in order to avoid seed discoloration or sprouting. This occurs about the middle to the end of September. In Washington, lack of a nearby seed processing plant prevents safflower production for oil. A group from Canada recently came to Washington State to look into growing a GMO safflower. This area was appealing to them since there was a low possibility of cross breeding. In 2007, a genetically modified safflower was bred to create insulin. A Canadian company is growing insulin in the seeds of safflower. The crop is grown counter seasonally to reduce the risks of the insulin-producing genes crossing to other plants. It is being grown on a trial basis in Chile, the U.S. and Canada.

## Key pests:

Weeds are the main pests in safflower. Safflower seedlings are not very competitive so early weed control is important. Weed pests include wild mustard, kochia , Russian thistle, downy brome, wild oat and prickly lettuce. Diseases include flower head rot caused by *Sclerotinia* and, root rots specifically white mold caused by the *Pythium* fungi. Insects are less of a pest in safflower but the main pests are wireworms and cutworms.

**Key pesticides:**

Weed control choices are limited. To control grasses and some broadleaf weeds growers can use Treflan or Sonalan. Seed treated with Thiram controls rot. Wireworms and cutworms can be controlled with Sevin.

**Critical pest**

**Control issues:**

Safflower can be severely injured by soil residues of broadleaf herbicides that were used on small grain crops if used in a rotation with them. Safflower should not follow safflower in rotation or in close rotation with crops that are susceptible to white mold such as sunflowers, mustards or canola. Growers should pick varieties that are tolerant to bacterial blights.

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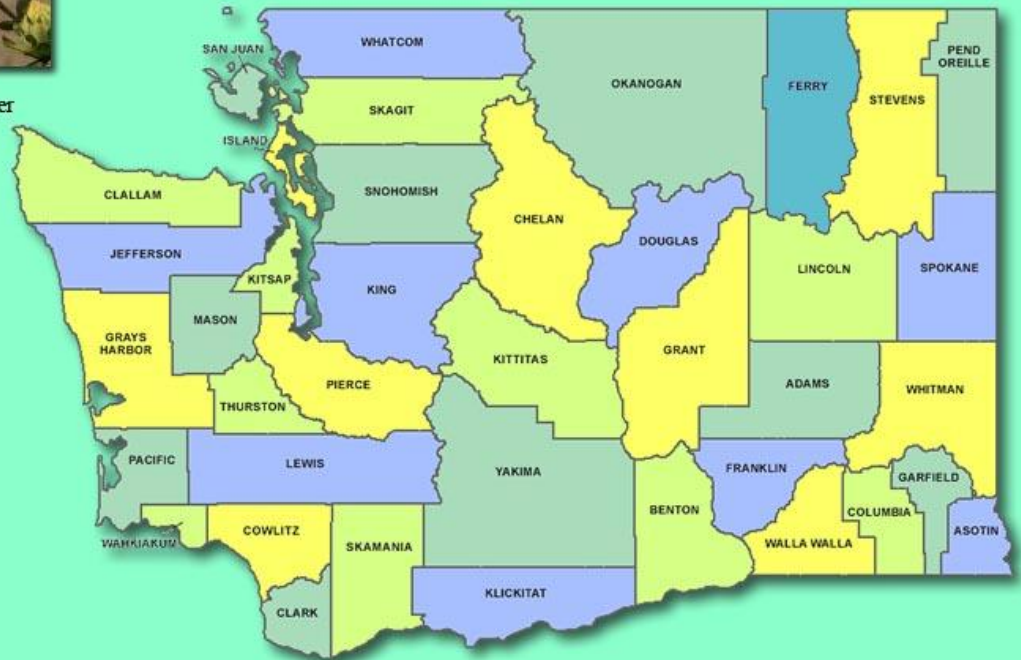
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**Location of production:** Ferry County.



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## Safflower Production in Washington State



■ Area of Safflower Production