

Safflower: Oilseed for drier, warmer climates

Broad-leaf crops, which fit well into our cereal-based cropping systems, are needed to improve long-term sustainability of our agriculture in the High Plains. Depending on the crops selected, it can improve resource-use efficiency, break the pest and disease cycle and control weeds better.

In addition, if the broad-leaf crop is better heat and drought adopted, that will be a bonus.

Safflower, one of the oldest crops known to humans, is grown today for oil, meal and birdseed in the U.S. Seeds have been found in 4,000-year-old Egyptian tombs. The crop is believed to be originated in desert regions of the Middle East. Cultivated safflower is grown in hot and dry climates around the world and the plant looks like thistle plant.

Safflower is grown in drier regions

of western states, including North Dakota, South Dakota, Montana and California with annual acreage ranging around 300,000 acres.

Based on oil composition, safflower can be classified into two types; high oleic, which are rich in monounsaturated fatty acids; and high linoleic, which contain polyunsaturated fatty acids. Both types are high quality edible oils and are good for preventing coronary heart diseases. Safflower contains 30 to 45 percent oil content. Birdseed market prefers

bright, white seeds, but do not consider oil type. High linoleic are the traditional safflower varieties grown in India and other Asian countries.

Due to lower shelf life, high linoleic safflower oil is not used for cooking in the U.S. They are used as a drying agent in paints and varnishes. High oleic safflower is used in cooking and there is considerable demand in the health food market.

Safflower meal, after extracting oil, can contain 25 percent protein.

Vegetative safflower can also be used for high quality forage but seed yield and quality of seed will be reduced.

The reason for increasing interest in safflower in the stress prone High Plains is due to some of the agronomic traits. It has a tap root system that can penetrate eight to 10 feet during the season, which offers bet-

ter drought tolerance than traditional cereal crops.

It is related to the sunflower family, but produces multiple heads on branches. Each head is closed and contains 15 to 20 seeds, which are not easily predated by birds. Safflower can also tolerate heat stress better than other oilseeds like canola.

At present, only spring safflower cultivators are grown in the U.S. A group of researchers under the leadership of Dick Auld, Texas Tech University, are working to develop winter safflower cultivators.

For more information, contact Leonard Sangu Angadi, crop physiologist, New Mexico State University, Agricultural Science Center at Clovis, 575-985-2292, angadis@ad.nmsu.edu

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By Sangu Angadi