

Safflower Production in Cache County

In recent years, northern Utah residents have likely noticed Safflower, a colorful yellow or orange flowered plant being grown in many cultivated fields. It is one of the last plants to be harvested at the end of our growing season. Perhaps readers have observed combines harvesting this crop in recent days.

Area farmers have found this plant can provide reasonable economic returns and be a great option in crop rotations, especially where weeds such as jointed goatgrass have become a problem. Sonolan herbicide, applied preemergence, has been very effective in controlling certain annual grasses and broadleaf weeds in safflower fields. Safflower's unusual ability to extract water from the soil with its deep taproot has made it a great alternative when rainfall or irrigation water is limited. Safflower is mostly grown on arable dryland following wheat or barley. An increasing number of irrigated acres are being planted each year. Yields vary from 700 to 2500 pounds per acre, depending on various factors. A typical price is .12 to .15 cents per pound.

Safflower is a member of the sunflower family. It is a highly branched, herbaceous, thistle-like annual, usually with many long sharp spines on the leaves. Each branch typically has from one to five flower heads containing 15 to 20 seeds per head. Plant height varies from 15 to 30 inches, depending on environmental conditions and variety planted. The taproot of safflower can penetrate to depths of 8 to 10 feet if subsoil temperature and moisture permit. As a result, safflower is more tolerant to drought than small grains.

Safflower is typically sown in late April or early May. Recommended seeding rates are 15-25 pounds /acre on dryland and 20-35 pounds/acre on irrigated land. Row widths vary from 6 to 14 inches with seeds being planted ½ inch deep in a firm seedbed. Seedlings generally emerge in one to three weeks with early seedling growth being rather slow. A young plant spends two or three weeks in the rosette stage while growing leaves. Temperatures as low as 20 degrees are tolerated by safflower plants while in the rosette stage. The plants are very susceptible to frost injury from stem elongation to maturity, but Cache Valley temperatures are usually warm enough by then. Fully grown safflower is extremely wind resistant, with few losses from lodging or shattering.

Safflower oil has mainly been sold into the health food market because it is unsaturated, having high linoleic and oleic acid levels. A health conscious population has created the most significant market for safflower oil as salad oil, margarine and cooking oil. It usually commands a premium price among edible oils.

Most of the safflower grown in our area is sold under contract and is used for birdseed. The birdseed market caters to racing pigeons, parrots, other pet birds, gerbils, hamsters, and to other commercial small animals. Seed must meet stringent standards of quality to qualify as birdseed. Among other things, the seed must be uniformly snowy white, large, and free from pappus (bristles at the end of the seed)

to command a premium price. Recent statistics show that over 40,000 tons of safflower grown in the western United States is consumed by the birdseed market.

Some safflower varieties are being developed for use as a livestock feed. Safflower meal is the high protein byproduct remaining after extraction of the oil from safflower seeds. Meal from de-hulled seeds is a high quality protein supplement, similar to canola meal, but with slightly more protein and energy. It is suitable for all classes of cattle, swine and poultry.

There is also increasing evidence that whole safflower seeds may be a good source of fat for lactating dairy cows. The composition of whole safflower is roughly comparable to cottonseed, being higher in fat and lower in protein. Feed experiments at Utah State University show that we can process a 50:50 mixture of corn and safflower without plugging the equipment. Ground or dry extruded safflower seeds were fed to dairy cows up to 2 percent of the diet without a negative impact on feed intake, milk yield or milk composition. Feeding processed safflower seed at 4 percent of the diet did result in decreased milk fat content. Many local producers are hoping we can substitute an increasing quantity of safflower to at least partially replace pricey whole cottonseed as a feed supplement for dairy cattle.

To assess varietal performance in Northern Utah and make some comparisons between lines, variety trials for 12 safflower lines was completed in 2005 along with 14 additional replicated varieties harvested earlier this week at the Greenville Experiment Farm in North Logan. Results are always reported at our annual Safflower School held in Cache County during January.