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YELLOW STAR THISTLE

A Threat to Idaho Land Users

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Yellow starthistle, *Centaurea solstitialis* L., also called St. Barnaby's thistle and golden thistle, is an annual of the knapweed group. It is native to the Mediterranean Region. In 1927 it was present in the Midwest and in 1952 it was found in southwest Idaho.

Yellow starthistle is commonly a winter annual. It germinates in the late summer or fall, over-winters, produces seed the next year and dies. However, its seed can germinate and grow to maturity during one growing season.

Yellow starthistle is readily recognized when it is in flower. The flower is bright yellow (similar to dandelion in color) and has long sharp rigid spines as bracts below each flower. The mature flowering plant is gray-green in color with cottony hair on the leaves and stems. It reaches a height of 1 to 3 feet, is branched and has the yellow flower head at the end of each branch. The leaves are narrow with the base of the leaf extending along the stem giving a winged or ridged appearance.

The mature plant produces many seeds that may remain viable in the soil for 2 to 3 years. Two types of seeds produced are light colored with bristly awns and dark with no bristles. The seed germinates readily when temperature reaches about 68 degrees F, and is capable of germination and establishment during all seasons of the year. Seedlings which develop after mid-June may over-winter before producing seed.

Seedling leaves are dull green and spatula shaped. The older basal leaves assume the gray-green color and are lobed. Control is most easily accomplished at the seedling to rosette stage of growth.

Yellow starthistle invades range and pasture lands and competes with existing vegetation. It can crowd out es-



tablished grasses where moisture is limited and grasses weakened from overgrazing. These conditions cause loss of grazing and recreational use of the land. A toxic chemical in the plant can cause horse deaths from chewings disease. Long sharp spines can also damage eyes of cattle attempting to graze.

In Idaho the river breaks of the Clearwater, Salmon and lower Snake contain major yellow starthistle infestations. This spiny knapweed has also been found in Jerome, Ada and Washington counties.

Because of its severe effect on the land resource, existing infestations should be treated to confine the weed to presently infested areas. Eradication of new and accessible old infestations will help prevent future loss of grazing and recreational land uses.

Eradication and Control

To eradicate an infestation, make several herbicide treatments and use an herbicide with a residual soil life of 2 to 3 years. Young plants of yellow starthistle are easily killed with foliage-applied herbicides if they are treated from the emerged seedling to the early rosette stage.

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Control in Large Areas Where Enough Grass Is Present To Revegetate the Area

1. Spray 1 to 2 pounds 2,4-D per acre while the weed is in the seedling to rosette stage. Either amine or low volatile ester formulations are effective. At least two applications a year will be necessary depending on seedling emergence. Since 2,4-D has no residual action, repeated annual applications will be necessary.

2. Apply a combination of 1 pound 2,4-D plus 1/8th pound picloram per acre, or picloram alone in the form of Tordon 22K, at the same stage of growth. This will give control of existing plants and seedlings.

3. If ground sprayers cannot be used, acquire a special use permit and spray large areas of rangeland by helicopter. Application of picloram in the form of Tordon 22K has given excellent kill of yellow starthistle and goatweed. Other vegetation—mainly balsamroot, lupine, lomatium, filaree and grasses—have apparently survived with minimum injury.

Small Spot Eradication

For spring or fall on young growth, apply picloram at the rate of 1/2 to 1 pint of Tordon 22K per acre. If bare ground is desired on noncrop land use one of the following soil sterilants at the rate recommended on the label: atrazine (AAtrex®), bromacil (Hyvar X®), simazine (Princep®), diuron (Karmex®) or monuron (Urox®).

For Control in Areas Where Translocated and Soil-Residual Herbicides Cannot Be Used

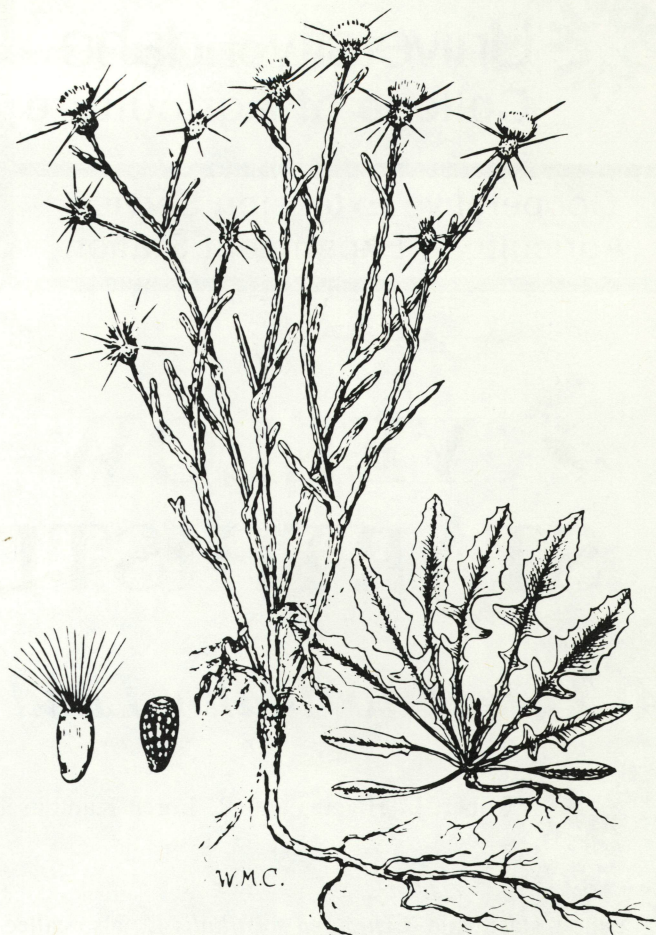
Flame burning or treatment with Paraquat at 1/2 pound cation per acre will provide control. These treatments must be repeated as new seedlings emerge. Paraquat is registered only for noncrop use or use before reseeding pasture and rangeland.

Any successful control or eradication program requires treatment that will prevent seed production for at least 3 consecutive years.

Prevention

The key to prevention is to stop the spread of seed.

1. Maintain vigorous grass cover on rangelands.
2. Avoid introducing starthistle seed, especially to disturbed sites.
3. Follow a detection procedure around all access areas, disturbed areas such as new rights-of-way, water



developments, livestock drive areas or other potential invasion sites.

4. Eradicate immediately any new starts of yellow starthistle.

CAUTION—Do not apply residual herbicides on soils where desirable plants are growing. Use of a herbicide in any manner inconsistent with the label is illegal. Read the label carefully to assure that the intended use is listed.

The Authors

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