PNW0585

White Campion or White Cockle

Silene latifolia (Poir.)

INTRODUCTION

White campion, also known as white cockle, was first noted in eastern Washington in 1923. It was introduced from Europe. It is currently found throughout the northern United States and southern Canada. White campion is native to Africa, temperate Asia, and in Europe from Finland south to Spain. It contaminates hay fields, roadsides, ditches, and fencerows. It is a prolific seed producer and is tolerant to many herbicides. White campion is often confused with other species of Silene, especially night-flowering catchfly (*Silene noctiflora*). Other common names of white campion include evening lychnis, white robin, snake cuckoo, thunder flower, and bull rattle.

IDENTIFICATION

White campion is in the Caryophyllaceae or pink family. It behaves as a biennial or short-lived perennial plant and grows from 1 1/2 to 3 1/2 feet tall. Stems are jointed and hairy at the base, but hairless at the tip. Leaves are also hairy, simple, ovate or lanceolate, and originate on opposite sides of the stem. In the spring, perennial plants appear as rosettes and produce flowering stems by mid-May. As the stems elongate, the basal leaves wither. Seedling plants have a taproot that gradually thickens. As plants mature, roots thicken and spread laterally to form short rootstalks. New plants often arise 4 to 8 inches from a mother plant and remain attached by horizontal root segments.

White campion is dioecious, meaning that male and female flowers are borne on different plants. The sex ratio is most often female-biased with male plants ranging from 25–50% of a population. Flowers are white, sometimes pink, with five notched petals. Petals are longer than the calyx. Sepals are fused together to form a sticky tubular calyx surround-

White campion in timothy.

White campion root stock with new crown.

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Male and female flowers.

Mature seed pods.

ing the flower. In male plants, the calyx is 1/2 to 3/4 inches long, with 10 veins. In female plants, the calyx is 3/4 to 1 1/4 inches long and has 20 veins. Plants will flower from May to September and produce some viable seed within the normal cutting interval of alfalfa and timothy hay. Flowers open in the evening but close by noon. Green seed capsules, if cut from the plant and allowed to dry will often contain viable seeds.

Seeds are kidney shaped, grayish-brown to bluish-gray in color, and similar in size to alfalfa or clover seed. The seed surface is covered with pointed tubercles (wart-like projections) arranged in three or four rows on each side, giving the seed a rough appearance.

Cotyledons of seedlings are fleshy. First true leaves are covered with short dense hairs. Seedlings are tap-rooted. Root structure changes to a branched system as the plant matures.

Night-flowering catchfly (*Silene noctiflora*) is often mistaken for white campion. However, night-flowering catchfly, an annual, is a very sticky plant and has perfect flowers, i.e., both male and female structures occur on the same flower on all plants. It also has a simple taproot. Bladder campion (*Silene vulgaris*) is also similar, but lacks hairs. Its flowers are also perfect. Cow cockle (*Vaccaria pyramidata*) is an annual, with pink, perfect flowers.

BIOLOGY AND ECOLOGY IN THE PACIFIC NORTHWEST

White campion likes well-drained soils. It thrives in hay, mint, cereal grains, pastures, wet ditch banks, and disturbed sites. In dry climates, it is seldom seen except in irrigated land. Seeds germinate primarily in the fall, but will germinate anytime the soil is warm and moist. Seedlings do not tolerate high temperatures. Seeds can float on water, thus can be spread in recycled irrigation water. Seeds can remain viable for several years in the soil, although the seed bank on the surface only lasts about three years. A single white campion plant can produce up to 25,000 seeds per season. Each cone-shaped pod can contain 250–300 seeds.

PREVENTION

White campion is often a contaminant in seed of clover and timothy. Planting certified seed or seed conditioned to certification standards is the best way to avoid accidentally planting white campion seed. Consult the seed tag for weed content and request a detailed description of the seed lab analysis of the seed lot purchased. Some seed suppliers have certified seed re-tested to specifically look for white campion contamination.

Fields are often contaminated by movement of seed from field borders and fencerows. Good farm sanitation practices can reduce spread of this weed. Movement of harvested hay from fields infested with white campion can easily spread seed to un-infested areas. Seeds can ride on harvesting equipment. Since white campion seeds can float, screens to catch weed seed may help when using water from irrigation canals or recycled irrigation water.

CONTROL

Cultural Control

New infestations can be eliminated before seed-set by hand pulling. Deep plowing will kill mature white campion plants if they are covered with ample soil. Seedlings can be killed with surface tillage, but damage to alfalfa will also result. Frequent cutting or short cutting intervals (less than 30 days) will help reduce the incidence of mature seed development, but alfalfa yields will be lower and stand life may be shortened. Frequent cutting of ditch banks and field edges to prevent seed formation may eventually reduce or eliminate the infestation, as white campion is not a long-lived plant.

Biological Control

No biological control agents are known.

Chemical Control

Several herbicides suppress white campion in cropping systems, including phenoxy and dicamba formulations. In alfalfa, preplant-applied benefin, trifluralin, and EPTC herbicides provide 30 to 50% control. In seedling alfalfa, 2,4-DB, bromoxynil and imazamox will give some, but not complete control. In established alfalfa, dormant applications (preferably in the late fall) of tank mixes of diuron, hexazinone, or metribuzin provide some suppression. Paraquat will kill small seedlings.

In timothy and other grasses, phenoxy and dicamba compounds only give partial control. Metsulfuron and diflufenzopyr give good control of white campion; however, these products can damage some seedling grasses, so timing is very important. Several options are available for use in mint that are very effective. For specific suggestions in different cropping systems, refer to the Pacific Northwest Weed Management Handbook. This publication is available from extension offices in Oregon, Idaho, and Washington and on-line at http://weeds.ippc.orst.edu/pnw/weeds.

Flowering white campion in alfalfa.

Immature white campion seed pods.

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