

BROMUS INERMIS (*Bromus inermis*)

Common name : Awnless brome, Smooth brome

Introduction and Identification:

Awnless brome has deep roots from rhizomes or underground stems, possesses open panicles with stiff branches. The Latin name of this grass refers to the awnless lemmas that distinguish it from other introduced and native species of the same genus.

This cool season grass is a problem weed in disturbed areas of old pasture and in mixed and tallgrass prairie. It is not very responsive to management practices. Awnless brome exists as planting for forage and a cover crop. This highly persistent weed forms a dense sod reducing the coverage of native vegetation.

Natural History

Awnless brome indigenous habitat ranges from France to Siberia and was introduced to the United State by the California Experiment Station in 1884. It has spread to the northern and northeastern Great Plains to Tennessee, New Mexico and California, and occurs as far north as Alaska. The grass occupies pasture, field and woods edges, roadsides and riverbanks. Strains have been developed and the southern strain shows more drought and heat tolerance. The grass is established in overgrazed pastures and old fields and invades prairie from roadsides.

Life Cycle and Ecology

Awnless brome begins growing early in spring and growing to late fall. The first adventitious roots grow within 5 days of germination and rhizome formation starts 3 weeks to 6 months after germination. Shoots may emerge in the Chicago area in the middle of March and flowers begin to form in early April. Boot stage is reached in middle to late May, and flowers bloom in the first part of June. Seeds ripen in July. Carbohydrate levels are lowest in boot stage but these levels increase when the internodes lengthen until heading.

The grass needs a vernalization period, promotion of reproductive organs effected by external temperature, under short fall days and longer spring days. It has been observed that 13 hours of daylight are necessary for flowering. Initial growth in spring can occur followed by a cold spell when the vernalization process takes place and the inflorescences develop in the same year. Awnless brome needs low temperature exposures from 1 day to 2 weeks for vernalization to occur. Five to 14 leaves must be present before flower formation which occurs at day lengths of 17 to 18 hours in the warm season. Air temperatures below 60 degrees F resulted in little flowering activity.

Awnless brome is cannot fertilize itself and open-pollinated. Same time flowering among individual plants is commonplace; pollen may land on a plant as much as 150 feet away. Forty-seven to 160 heads may be produced per plant containing 156 to 10, 080 seeds. Chalcid flies and Intonidid midges take the seeds to other locations implying that the seeds may be confiscated by ants.

The deep root system (4.7 feet) imparts good drought resistance and the heavy root mass near the soil surface is the result of the number of rhizomes just underground. Rhizomes may have a life expectancy of a year.

Management and Control

Cutting Awnless brome in the boot stage (while the inflorescence is enclosed in the sheath) is the most effective management method; the grass reaching 18 to 24 inches tall in late May. Best conditions for cutting exist in hot and humid day followed by a dry spell.. Greatest winter injury may be obtained by cutting at a little over an inch in height when the grass changes from the vegetative stage to early extension of the reproductive phase. Cutting the plant before the tip lengthens drains the already low carbohydrate levels. Field trials show that awnless brome reduced at greater levels when cut 4 times a year. A single close cut in boot stage (18 inches) may be one good control method; natural area or park managers may want to subject the grass to repeated mowing starting in late May, at least 4 times in the growing season.

Awnless brome may be prevented from spreading by burning but is not satisfactorily reduced by fire. A burn treatment at the boot stage may be more effective than mowing. Late May fire treatments would be effective in the northern plains.

<http://tncweeds.ucdavis.edu/esadocs/brominer.html>