

AGRONOMY
FACT SHEET No. 35
O.E. STRAND and R. BEHRENS

**Identification and Control
of Wild Proso Millet**

Wild proso millet (*Panicum miliaceum* L.) was first identified as a serious weed problem in Minnesota in 1970. Since then it has been found in about 20 Minnesota counties ranging from Dakota and Chisago in the east to Lincoln, Lac Qui Parle, and Wilkin in the west. Found mainly in corn and soybean fields, wild proso millet is a prolific seed producer and a vigorous competitor in row crops.

Cultivated proso millet (*Panicum miliaceum* L.), also called "Hog Millet," is grown as a feed grain and bird seed crop in Minnesota and in several other states. Since it is similar to oats or barley in feed value, in some countries of the world proso millet is used as human food.

The exact origin of wild proso millet is unknown. Some evidence exists that it may have come from Asia, or it may have developed a weedy growth habit over time from one of the many cultivated varieties. Wild proso millet resembles the seed and panicle type of an old proso millet variety, "Crown," which was grown widely in Minnesota in the 1940s and 1950s. One farmer in Stevens County, Minnesota reported that he had observed wild proso millet in several patches on his farm since the 1930s, when he purchased seed and grew a mixed millet emergency hay crop on his farm.

**DESCRIPTION AND TAXONOMY
OF WILD PROSO MILLET**

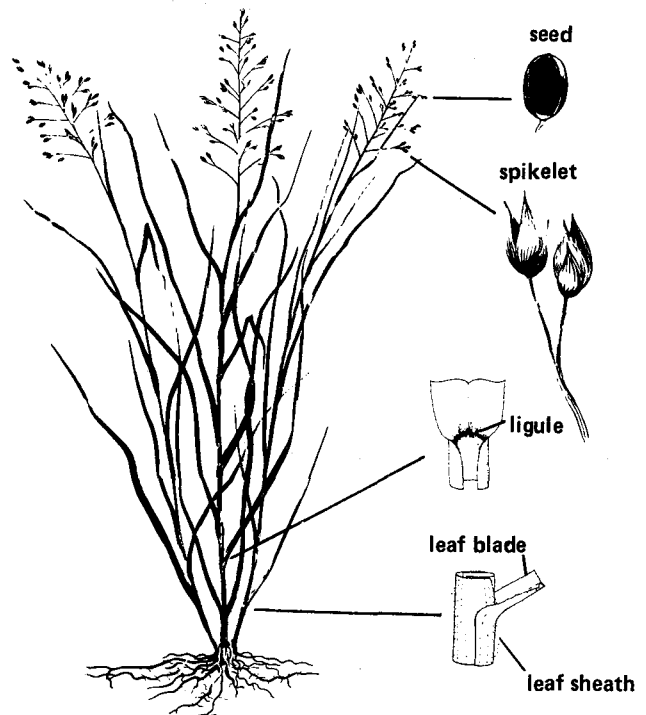
Wild proso millet is a very competitive branching annual that grows from seed each year. It is erect in growth habit, growing from 2 to 6 feet tall, but some culms (stems) may be decumbent (prostrate) at the base. It has leaf blades that are hairy on both surfaces and range from 1/2 to 3/4 inch wide. The leaf sheaths (which encircle the stems) are round, split, and have long, spreading hairs. The ligule (projection at base of leaf blade) is a dense fringe of hairs fused at the base and about 2 mm. long. Each culm is topped by a spreading panicle 6 to 12 inches wide, which often is not fully extended from the leaf sheath. The spikelets, composed of the seed and surrounding glumes, are 4 to 5 mm. long, ovate, pointed at the tip, and strongly nerved with 7 to 9 nerves. There is one fertile floret (seed) per spikelet with a hardened lemma and palea (hulls) and the caryopsis, or grain, within. The seed is smooth and shiny, olive-brown to brownish-black in color at maturity, and about 2 1/2 to 3 mm. long by 1 1/2 to 2 mm. wide with definite nerves or veins visible on the surface.

Wild proso millet is in the *Panicaceae* (millet) tribe of the grass family, closely related to the corn and sorghum tribes. These three tribes make up one subfamily of the grasses as classified by A.S. Hitchcock, a noted authority on grasses, in *Manual of the Grasses of the United States*. Like corn, the first internode of wild proso millet elongates during emergence, permitting this

weedy grass to germinate from depths of 2 or more inches in the soil. The readily identifiable seed of wild proso millet usually does not deteriorate after germination. If the plant is carefully removed from the soil the seed can often be found among the roots to aid in identification of the plant. Also like corn, wild proso millet is tolerant of atrazine and has been increasing rapidly in areas where atrazine has been used widely as the principal corn herbicide.

Unlike cultivated proso millet, the wild strain has definite weedy characteristics. Several panicles are produced on each plant, some from the axils of the upper leaves which ripen later than the terminal inflorescence over a several-week period. Seed production usually continues until a killing frost stops plant growth in the fall. The seed is easily shed from the plant when mature and normally does not germinate in the fall but remains dormant over winter to germinate the following spring. Wild proso millet produces a large quantity of seed per plant. It is common to find 500 or more seeds per square foot in infested areas. The seed is spread easily by harvesting equipment, especially in sweet corn production fields (where it has been spreading rapidly).

Wild proso millet (*Panicum miliaceum* L.).



CONTROL OF WILD PROSO MILLET IN FIELD CROPS

Wild proso millet is a warm season grass that germinates most readily when soil temperatures are 50° F. or above. For that reason wild proso millet is less competitive if corn is planted early in narrow rows (30 inches wide or less) than if it is planted later in wide rows, as is usually the case with sweet corn.

Most field crops can be planted in wild proso millet infested areas if good weed control practices are followed and a good choice of herbicides is made.

Corn

Wild proso millet germinates readily from deep in the soil (2 to 3 inches or more). For this reason herbicides such as EPTC with protectant (Eradicane), butylate with protectant (Sutan Plus), alachlor (Lasso), or metolachlor (Dual), when applied at the full label rate for the soil type and incorporated into the soil before planting have given the best control of wild proso millet in Minnesota trials. Of these four herbicides EPTC has given the most consistent control. With more rainfall after application alachlor and metolachlor, applied preemergence, also have given acceptable control. However in western Minnesota with lower average annual precipitation or in drier years, a single application of any of these four herbicides has failed to control wild proso millet in corn. In two trials during 1978 a combination of EPTC (Eradicane) applied preplanting, incorporated followed by a band application of alachlor (Lasso) preemergence with one or two cultivations gave excellent control of wild proso millet.

Soybeans

The herbicides trifluralin (Treflan), profluralin (Tolban), dinitramine (Cobex), fluchloralin (Basalin), pendimethalin (Prowl), or vernolate (Vernam) applied preplanting and incorporated have given only fair control of wild proso millet when used alone. However if one of these herbicides is used preplanting, incorporated followed by preemergence use of alachlor (Lasso) or chloramben (Amiben), good control of wild proso millet usually has resulted. These preemergence herbicides may be banded and one of two cultivations used to control weeds in the row. Chloramben (Amiben) may be tank-mixed with trifluralin (Treflan) and the mixture incorporated. Alachlor, applied preplant and incorporated at the full label rate for the soil condition, also has given acceptable control in some trials when applied alone or in combination with chloramben as an overlay treatment.


For effective control of wild proso millet in soybeans the full label rate of each herbicide — for the soil condition — must be used.

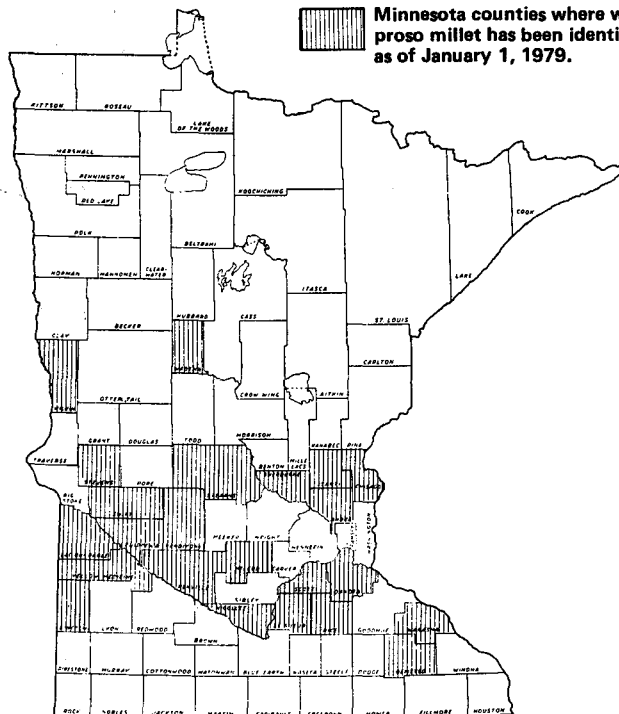
Small Grains

If small grains are planted in April in Minnesota, with adequate fertility and soil moisture wild proso millet normally does not compete seriously with the crop. Small grains should not be planted late in areas known to be infested with wild proso millet as there is presently no effective herbicide for control.

Sunflowers

EPTC (Eptam) applied preplanting and incorporated at the full label rate has given fair to good control of wild proso millet in sunflowers if soil moisture conditions are favorable. Chloramben (Amiben) can be applied preemergence, banded or

 Minnesota counties where wild proso millet has been identified as of January 1, 1979.



broadcast together with row cultivation to give additional control.

Dry Edible Beans

Preplanting applications of EPTC (Eptam), trifluralin (Treflan), profluralin (Tolban), or dinitramine (Cobex) or mixtures of EPTC with these herbicides should give fair to good control of wild proso millet in dry edible beans. However, do not use EPTC on Adzuki beans. Alachlor (Lasso) may be applied alone or in a tank mixture combination with trifluralin (Treflan) as a preplanting, incorporated treatment. The combination, when used at maximum label rates for the soil type, may give better wild proso millet control than any herbicide used alone. Row cultivation also may be needed to give additional control. Alachlor should not be used on Adzuki beans.

Flax

Flax does not compete well with weeds such as wild proso millet. EPTC (Eptam) or dalapon will suppress wild proso millet in flax but cannot be depended upon for adequate control. Therefore, flax should not be planted in fields where wild proso millet is a problem.

The information given in this publication is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Minnesota Agricultural Extension Service is implied.

Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Roland H. Abraham, Director of Agricultural Extension Service, University of Minnesota, St. Paul, Minnesota 55108. The University of Minnesota, including the Agricultural Extension Service, is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, creed, color, sex, national origin, or handicap.