



United States Department of Agriculture

Natural Resources Conservation Service

Plant Guide

TALL OATGRASS

Arrhenatherum elatius (L.)

P. Beauv. ex J. Presl & C. Presl

Plant Symbol = AREL3

Alternative Names

Common: bulbous oatgrass, false oatgrass, tall meadow oat, onion couch, and tuber oatgrass

Scientific: *Arrhenatherum elatius* var. *bulbosum*



Tall oatgrass seedheads and stems. Photo by Joseph D. Ruffner, NRCS Maryland Plant Materials Center.

Description

General: *Arrhenatherum elatius* is an introduced, cool-season, perennial bunchgrass. It produces short rhizomes that develop into tussock-forming culms. Erect culms grow 3 to 5 feet tall. Leaf blades are flat and coarse, growing 3/8 to 3/4 inches wide. Ligules are short, square, membranous, and usually ciliate. Sheaths are open and smooth. Auricles are absent (Trujillo & Strand, 2018). The inflorescence is a narrow panicle, green to purple-tinged, and can grow 6-12 inches long with spikelets containing twisting, angled awns (Lesica et. al., 2012). The base of the stem is sometimes swollen, almost bulblike. Some varieties form corms where a sprouting bud produces adventitious roots and a short rhizome. This becomes an aerial shoot as it nears soil level. Shoots emerge in early autumn and form corms throughout the winter and spring. Aboveground portions of the plant begin to elongate in late March, with growth increasing rapidly until early May when flowering begins. Plants begin to senesce in July (Tanphiphat & Appleby, 1990).

Distribution: Tall oatgrass is native to Africa and Eurasia and was introduced to North America in the 1800s as a pasture grass. It has become naturalized in most of the United States and throughout most of Canada (Lesica et. al., 2012). For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Adaptation

Tall oatgrass can be found along streams, roadsides, fields, forest edges, and meadows at elevations ranging from 4,200-10,000 feet (Lesica et. al., 2012). It grows best in environments that receive 16 inches or more of annual precipitation and is adapted to fine or medium textured, excessively drained, and moderately fertile soils with pH ranging from 5-8 (Wills & Begg, 1994).

Uses

Tall oatgrass establishes easily and has been used in conservation revegetation efforts, as a cover on surface mined lands and as a minor component in forage seedings on marginal pastureland. It is considered an excellent forage for livestock and wildlife in late spring and early summer; although, it is sensitive to grazing pressure (Trujillo & Strand, 2018). It has been recommended for pasture plantings and is considered a good companion plant in a mix including legumes, such as sweet clover (Wills & Begg, 1994).

Status

Threatened or Endangered: No

Wetland Indicator: FACU: Atlantic and Gulf Coast Plain, Eastern Mountains and Piedmont, Great Plains, Midwest, Northcentral & Northeast; UPL: Alaska, Arid West, Hawaii, Western Mountains, Valleys, and Coast

Weedy or Invasive: Tall oatgrass is considered a noxious weed in many regions in the west and has been known to displace desirable vegetation if not properly managed, particularly the *bulbosum* subspecies. Please consult the PLANTS Web site

(<http://plants.usda.gov/>) and your state's Department of Natural Resources for this plant's current status (e.g., threatened or endangered species, state noxious status, and wetland indicator values).

Planting Guidelines

Ensure the seedbed is firm and free of weeds. For best results, seed in the spring as seedlings are not winter hardy. Recommended seeding rates range from 5 to 8 pounds Pure Live Seed (PLS) lbs per acre. Seeding depth should be ¼ inch followed by a cultipacker to ensure good seed to soil contact.

Management

Fertilizer and lime applications should be applied based on soil test results. During the establishment year, control of broadleaf weeds is recommended to increase the success of the stand.

Environmental Concerns

Tall oatgrass should not be planted in vulnerable or sensitive ecosystems as it is highly competitive against native vegetation and may displace natural plant communities (Clark & Wilson, 1997).

Control

Studies have investigated mowing, herbicide, and prescribed burning as tools to control tall oatgrass. Mowing proved most effective (Clark & Wilson, 1997). Mowing mid-season to remove flowering heads may temporarily suppress tall oatgrass while allowing shorter, native grasses to re-seed (Stanley et. al, 2010). Mowing twice between late spring and early summer, as well as mowing at 15cm, is most effective in reducing tall oatgrass cover (Clark & Wilson, 1997).

Clark and Wilson (1997) also recommend burning as a control method as it removes biomass and increases the mortality of regenerative buds. Burning is best used to prepare prairie sites dominated by tall oatgrass, for increased establishment of native seed (Maret, 1996).

Control of tall oatgrass with herbicide has inconsistent results. Particularly for the control of *A. elatius* var. *bulbosum* as researchers have observed that bulbous oatgrass returns after glyphosate application, possibly due to the corms not accumulating a lethal dosage and therefore leading to regrowth and persistence (Tanphiphat & Appleby, 1990).

Rotational grazing could be used to slow the regeneration of tall oatgrass (Wills & Begg, 1994). Like mowing, if grazed too close to the ground, there is a smaller number of basal axillary buds to regenerate new shoots (Pfitzenmeyer, 1962). Several studies have revealed that *A. elatius* does poorly at sites that are heavily grazed, such as pastures.

Please contact your local agricultural extension specialist or county weed specialist to learn what works best in your area and how to use it safely. Always read label and safety instructions for each control method. Trade names and control measures appear in this document only to provide specific information. USDA NRCS does not guarantee or warranty the products and control methods named, and other products may be equally effective.

Seeds and Plant Production

Tall oatgrass is genetically tetraploid and is wind pollinated, although self-fertilization may occur (Wills & Begg, 1994). Due to the uneven timing of seed ripening and seed shattering, seed harvest has proven difficult. There are approximately 150,000 to 189,000 seeds per pound of tall oatgrass. Trials in New Zealand have revealed seeding rates of 26-40 lbs/acre led to seed yield between 200-400 lbs/acre (Wills & Begg, 1994). Seeds are non-dormant and have a high percentage of germination (Tanphiphat & Appleby, 1990).

Cultivars, Improved, and Selected Materials (and area of origin)

These plant materials may be available from commercial seed producers. There are two tall oatgrass cultivars released in the United States. 'Tualatin' from Oregon State University was released for improved seed retention and 'Ruffner' from USDA's Plant Materials Center in West Virginia was released for use as a cool season forage.

Literature Cited

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