

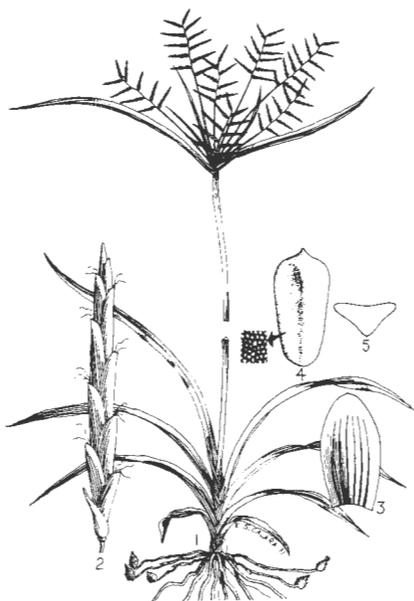


# Yellow Nutsedge

*Cyperus esculentus* L.

Yellow nutsedge is a perennial member of the sedge family (Cyperaceae). It is well adapted to irrigated agriculture and has become a particularly troublesome weed of row crops in Idaho, Oregon, and Washington. Yellow nutsedge reduces crop yield because it competes with crops for water, light, and nutrients and may produce chemicals that are toxic to crops.

In southern Europe, western Asia, and parts of Africa it is grown for its edible tubers. These have a taste similar to that of almonds and may be cooked, ground into flour, or made into a



1, yellow nutsedge growth habit; 2, spikelet; 3, bract; 4, seed, with closeup detail of surface reticulations; 5, seed, cross section.



Tubers and rhizome sections.

cold drink. The specific epithet *esculentus* means edible in Latin.

## DISTRIBUTION

Yellow nutsedge is found in temperate agricultural areas and highland tropics throughout the world. In the Pacific Northwest, yellow nutsedge is associated with intensively cultivated row crops, turf, and other disturbed sites. It is common in irrigated crops in eastern Oregon, western Idaho, and central Washington as well as in nonirrigated areas of western Washington and Oregon.

## DESCRIPTION

Yellow nutsedge superficially resembles a grass, but it is distinguished from true grasses by its triangular stems and three-ranked (arranged in groups of three) glossy leaves. It grows 12 to 32 inches tall. Its inflorescence (flower cluster) has numerous straw-colored flowers originating from a single point. Directly below each inflorescence, or umbel, are leaflike structures (bracts).

The underground portion consists of roots, rhizomes, and



Straw-colored flowers grow from a single point.

tubers. Single tubers develop at the rhizome tips. Tubers are  $\frac{1}{5}$  to  $\frac{3}{4}$  inch in diameter and tan to dark brown.

## REPRODUCTION

Yellow nutsedge reproduces primarily by rhizomes, cormlike basal bulbs, and tubers. Although yellow nutsedge produces seed, it does not spread primarily by seed because of low seed viability and low seedling vigor.

The basal bulb, located just under the soil surface, is the unit from which the leafy shoot and rhizomes originate. The rhizomes follow one of two possible patterns of growth. Some turn upward to produce another basal bulb, while others grow outward to terminate in single underground tubers.

Under favorable conditions, spread by tubers is rapid. Tuber densities may reach 12 million

per acre on heavily infested fields. Tubers form in the upper 18 inches of soil. More than 80 percent occur in the upper 6 inches. Tubers are readily detached from the rhizomes, which facilitates spread when the plants are pulled or disturbed by tillage equipment.

## LIFE CYCLE

In the spring tubers germinate and produce a shoot that grows upward until it reaches the surface where it is stimulated by light to produce the basal bulb  $\frac{3}{4}$  to 2 inches below the soil surface. Vegetative growth continues until mid-July when tuber formation begins. Plants emerging as late as August can produce viable tubers that overwinter. Tuber production continues until a killing frost occurs.

Tubers can remain dormant in the soil for extended periods of time with the degree of dormancy depending on depth in the soil. Tuber longevity increases with increasing soil depth. Many tubers near the soil surface are killed by low winter soil temperatures.

## MANAGEMENT

Prevention of infestations is one of the best control methods. Because of the high reproductive potential of tubers, control is difficult once an infestation occurs. Once yellow nutsedge becomes established, control may be achieved only through a long-term effort integrating cultivation, crop competition, and herbicide application.

**CROP COMPETITION.** Yellow nutsedge is suppressed by shade. Crops that close the rows early in the season are a good choice for infested fields because they reduce yellow nutsedge tuber production. However, some

tubers are produced even under low-light conditions. Plant crops in closely spaced rows at high density to maximize crop competition. Management techniques that encourage row closure and dense canopies such as adequate fertilization and irrigation will help. Crop competition improves the effectiveness of chemical and mechanical control methods.

**CHEMICAL CONTROL.** Nonselective and selective herbicides may be used to control yellow nutsedge. Control in headlands and field margins is important because these areas have optimal conditions for tuber production, including high moisture and absence of competition.

Check fields regularly to eliminate new infestations before they have a chance to spread. Soil fumigants may reduce yellow nutsedge infestations but are expensive. However, fumigation may be worthwhile if it also controls other soil-borne pests. Because pesticide labels change frequently, always check the annually revised *Pacific Northwest Weed Control Handbook* for specific chemicals and rates.

**MECHANICAL CONTROL.** Frequent tillage can provide effective control. Because the first shoot uses a large proportion of the tuber's energy reserve, tillage soon after shoot emergence will severely weaken the tubers, leaving them more susceptible to subsequent control measures. Shallow tillage brings tubers to the soil surface where they are susceptible to drying and freezing. Tillage can be repeated throughout the season if the field can be left fallow, or it can be used at the beginning and end of the growing season in combination with a competitive crop and herbicides.

Cultivation in row crops will suppress yellow nutsedge

growing in furrows and between rows before row closure.

## BIOLOGICAL CONTROL.

Biological control of yellow nutsedge is being investigated. A fungus has been found that may be effective.

## OTHER MEASURES.

- Thoroughly clean implements used in infested fields before using them in uninfested fields.
- Inspect nursery stock for yellow nutsedge and reject any infested stock.

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