

YELLOW NUTSEDGE

(*Cyperus esculentus*)

SEEDLING DESCRIPTION

Yellow nutsedge emerges as a pale green spike, similar in appearance to a grass seedling. However, the plant is not a grass at all, and its leaf blades have no collar region, ligules, or auricles. Viewed from above, the leaves are arranged in three vertical rows (three-ranked arrangement). Grasses have a two-ranked leaf arrangement. The three-ranked leaves, triangular stem, and v-shaped leaf blades are the major identifying characteristics of the sedges. The leaf blades of all sedges are much stiffer than grass, even in the seedling stage.

BIOLOGY

Yellow nutsedge is an erect, grasslike perennial member of the sedge family. The leaves arise from a central triangular

stem to form a clump that grows 1 to 3 feet (30 to 90 cm) high. Leaves are $\frac{1}{8}$ to $\frac{1}{2}$ inch (3 to 12 mm) wide, yellow-green, smooth, and shiny on the upper surface. Each leaf has a characteristic v-shape where the blade bends up along its midvein. This bend forms a distinct crease along the upper surface and a ridge along the lower surface from near the base of the sheath to the leaf tip. The lower surface of the leaf is lighter in color, dull rather than shiny, and has parallel veins.

Flower clusters (inflorescences) develop from early to late summer, when

1. All sedges have triangular stems.
2. Young shoots resemble grass seedlings.
3. Yellow flower head.
4. Yellow nutsedge requires full sunlight.
5. Tubers of yellow nutsedge.



system capable of producing 90,000 seeds with 50 to 90 percent viability.

Underground tubers that form at the end of each rootlet are even more important than seeds in the reproduction of yellow nutsedge. The tubers overwinter and survive soil temperatures as low as 20° F (-5.5° C). The tuber skin contains a chemical that must be washed off by soil moisture before the tuber can sprout. Therefore, yellow nutsedge does well on wet land.

In the northern United States, tubers sprout from late May until mid-July. When a shoot reaches the surface, it forms a basal bulb. Within three weeks, a new plant grows from this bulb, including roots that develop new tubers at their ends. In a single year, the outward growth of rhizomes from one tuber can produce 1,900 new plants and 7,000 new tubers, covering an area 6 feet (1.8 m) in diameter. Although frost kills all top growth, most of the viable tubers will sprout the following spring. Tubers do not last longer than three years in the soil.

Yellow nutsedge grows on low ground and moist fields, along riverbanks, and in ditches and heavily irrigated crops. It thrives in all soil types, including black peat soil, and it grows well in soils with a pH of 5.0 to 7.0. Yellow nutsedge does not tolerate shade.

SIMILAR SPECIES

Purple nutsedge (*Cyperus rotundus*) resembles yellow nutsedge, but several differences distinguish the two species. Purple nutsedge is smaller and darker and has reddish purple seed heads. Yellow nutsedge seed heads are strawcolored. In addition, the underground tubers of purple nutsedge form in chains along the roots, while yellow nutsedge produces only one tuber at the end of each runner.

The stiff-leaved growth of some members of the lily family resembles nutsedge growth. But the leaves differ considerably when viewed in cross-section. All sedge leaves have a v-shaped crease down the center; wild garlic (*Allium vineale*) leaves are hollow and round; and wild onion (*A.*

NATURAL HISTORY

A native of North America and Eurasia, yellow nutsedge is now found on all continents and in all fifty states. Along with purple nutsedge, it is considered one of the five worst weeds in the world, second only to quackgrass among perennials in some areas. In the United States, yellow nutsedge is a serious or principal weed in rice, peanuts, corn, cotton, soybeans, and potatoes. It infests various vegetable and cereal crops throughout the world.

Despite its weedy characteristics, yellow nutsedge is grown for its tubers in southern Europe, western Asia, and much of Africa. The nutlets taste like almonds and are edible at all stages of development. They contain 12 to 30 percent sucrose, 25 to 30 percent starch, and 30 percent oil, but they contain no caffeine, alkaloids, or asparagine. They are eaten raw or cooked, ground into flour, crushed to make a cold drink, or roasted and ground into a coffee substitute. The species name, *esculentus*, means "edible."

Other common names for yellow nutsedge are earth almond, yellow nutgrass, coco sedge, watergrass, and edible galingale.

CONTROL

Over the last twenty years, the use of selective herbicides has reduced competition from other weeds and allowed yellow nutsedge to grow and spread more easily. Once established, this weed can be hard to control because its tubers have high energy reserves, multiple buds, and a long sprouting period. In addition, the tubers are resistant to systemic herbicides.

Under experimental conditions, yellow nutsedge tubers can send sprouts to the surface from a depth of 32 inches (80 cm). This high energy reserve ensures vigorous sprouts that have a good chance of surviving poor weather, crop competition, and chemical treatments. An uneven herbicide application or improperly adjusted cultivator could lead to poor control or costly retreatment.

Yellow nutsedge tubers have as many

will deplete the tubers' energy reserves most quickly.

Pigs love to eat the tubers of yellow nutsedge, so some farmers use their swine to control severe infestations. When turned loose in a field, pigs quickly find the buried nutlets and in several days all but eradicate the weed.

Yellow nutsedge tubers often do not sprout until July. By this time, the crop may be tall enough to shade the nutsedge and reduce further tuber production by 95 percent. But even at this late sprouting date, plants can still produce as many as 200 tubers apiece, thus causing the weed problem to recur the following spring. Alfalfa and other forages are the crops best able to compete with yellow nutsedge for light. Because of early shading, yellow nutsedge is seldom a problem in small grains.

Yellow nutsedge tubers are unaffected by systemic herbicides because the chemicals are translocated from the top growth of the plant into the roots and rhizomes but not into the tubers. For this reason, the most effective herbicide treatments are preemergence applications that enter the young shoots before they emerge as well as the root system of young plants.

For specific recommendations, consult your county Extension agent or the most recent *Weed Control Manual and Herbicide Guide*, available through Meister Publishing Company, 37841 Euclid Avenue, Willoughby, Ohio 44094. Follow label instructions for all herbicides and observe restrictions on grazing and harvesting procedures.

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Where trade names appear, no discrimination is intended, and no endorsement by the Cooperative Extension Service is implied.

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