

Yellow Nutsedge, *Cyperus esculentus* L.¹

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Classification

Common Name: Yellow Nutsedge

Scientific Name: *Cyperus esculentus* L.

Family: Cyperaceae, Sedge Family

Seedling

Two or three leaves emerge from the ground simultaneously (Figure 1). The blades are linear, folded lengthwise, smooth, membranous, light green, and overlapping to form a somewhat triangular structure in cross section. The bud leaves are erect. The sheaths are tubular.

Mature Plant

Yellow Nutsedge is an erect perennial sedge and has unbranched stems which are solid and triangular in cross section, frequently growing up to 69 cm tall (Figure 2). It may reach a height of 90 cm. The leafy shoot and rhizomes originate from a basal bulb formed by a swelling of the stem below the soil surface. Rhizomes growing out from this basal bulb may produce either secondary basal bulbs or

underground tubers. The leaves have a prominent midvein and are arranged in three ranks growing from the basal half of the stem. The newer leaves are ascending and may be as long as, or longer than, the stem. The leaf width ranges from 2-15 mm. The inflorescence is umbel-like, with up to 10 unequal stalks bearing few to many spike-like branches of flattened yellowish brown spikelets. The spikelets are 1-2.8 cm long and 2 mm wide, each spikelet consisting of several flowers. The stalks may be up to 18 cm long but are frequently much smaller. The modified leaves underneath the inflorescence are variable in number and size. The larger modified leaves may be up to 30 cm long and 9 mm wide. The fruit is enclosed in a thin covering. It is broadest near the apex and gradually tapers to a narrow, rounded base. The fruit is somewhat triangular in cross section with 3 concave sides. The surface of the covering has minute dimples. The color of the fruit ranges from light tan to dark brown.

History

The genus name *Cyperus* is from *Cypeirus* which was the ancient Greek name for the genus. The Latin name *esculentus* means edible and refers to the tubers.

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Figure 1. Seedling, Yellow Nutsedge (*Cyperus esculentus* L.).

Habitat

This weed is found throughout Florida in scattered populations and throughout the United States. It occurs in all disturbed areas.

Biology

Seed production is variable and many stands do not produce mature seeds. Seeds planted in greenhouses or flats outside have been germinated, but there are no reports of seedlings in field situations. Some germination is probably occurring but is missed because the numbers are so few. Plants grow in a sigmoid pattern, producing a new leaf every 4.5-5 days in the normal growing cycle. Leaf growth is rapid for a short period of time; within a week the growth slows to an undetectable rate. The total period of leaf growth varies from 24-40 days. New leaves progressively shorten until the fourth or fifth leaf, with subsequent leaves gradually becoming longer. Tuber production is influenced by substrate.



Figure 2. Mature plant, Yellow Nutsedge (*Cyperus esculentus* L.)

Tubers planted in sand emerged sooner than those in sandy silt-loam, but tubers in sandy silt-loam produced more plants (at the end of a six-week period). Tubers planted in peat produced the most shoots per tuber both initially and finally. The tuber epidermis contains one or more substances that inhibit sprouting of buds on tubers. Washing tubers resulted in an increase in sprouting of fall harvested tubers. High nitrogen concentration, long photoperiods and high levels of gibberellic acid inhibit tuber formation. High temperatures (27 and 33°C) coupled with low nitrogen levels increased tuber production. At high nitrogen levels and long photoperiods (14 and 15.5 hours) shoot formation was promoted. High temperature favored shoot formation at 12.5- and 14-hour photoperiods, while gibberellic acid had an inhibitory effect. Rhizomes differentiating into new shoots increased with 18- to 24-hour photoperiods. Tuber formation diminished as photoperiod increased but number of tubers produced at the end of three months was unaffected. This is due to the production of new tubers from rhizome-produced plants. This plant tolerates high soil moisture and is intolerant of shade.

Control

Peanuts

Control of yellow nutsedge with preemergence herbicides is difficult to achieve. However, yellow nutsedge suppression is commonly observed with Dual Magnum, Pursuit and Strongarm. Only if weed density is relatively light will these herbicides alone be sufficient. Paraquat plus Storm or Basagran has some yellow nutsedge activity, but results will often be inconsistent and less than desirable.

Postemergence applications of Basagran can be used to control yellow nutsedge. However, Basagran plus crop oil must be applied twice, 7 to 10 days apart, in order to achieve acceptable control. Basagran will often provide 80% yellow nutsedge control. Cadre or Pursuit can be used to control yellow nutsedge, but Cadre is much more effective than any other postemergence herbicide option. Cadre will consistently give greater than 90% yellow nutsedge control.

Cotton

There has traditionally been few products that provide acceptable control of yellow nutsedge in cotton. There are no preemergence options and MSMA or glyphosate were the only options for postemergence or postdirected applications. However, MSMA and glyphosate are not highly effective on yellow nutsedge and will generally give less than 70 or 80% control. Envoke herbicide (registered in 2004) has immediately become the standard for sedge control. This is because Envoke will consistently give >90% sedge control. The most effective postdirected herbicide option is Suprend (a combination of Caparol and Envoke).