Laboratory
Grass and Sedge Weed Identification

A. Importance of Weed Identification

- Growers lose millions of dollars each year in wasted chemicals, application costs, and yield losses resulting from incorrect identification of weeds.
- A successful weed control program requires correct and early identification of weeds and timely application of the appropriate herbicide.
- Proper identification is the single most important step in making a weed control recommendation.
- “The most expensive herbicide is the one that does not work.”
- The grass family contributes more weed species than any other plant family. Of the world’s ten worst weeds, seven are grasses.

B. Helpful Hints in Identifying Weeds

- Look at several seedlings, particularly those on edges of fields where soil was not tilled. Older, mature weeds are easier to identify.
- Carefully dig up seedlings and remove the soil. Many times the seed will be attached and may be used for identification.
- For grasses note leaf shape, leaf width versus length, and plant growth habit (prostrate, decumbent, or erect).
- For broadleaf weeds, note cotyledon shape and size.
- Look for pubescence (hairs) on leaves and stems.
- Look at seed heads of grasses, flower color and shape on broadleafs; Identifying a weed after it has set seed will allow you to anticipate weed problems the following year.

C. Grass Weed Identification

- Grasses are the most difficult weeds to identify at the seedling stages. The presence or absence of a ligule and the type of ligule is a key to grass identification.
- You will be responsible for identifying the following grasses:

  barnyardgrass \((Echinochloa crus-galli)\)  red rice \((Oryza sativa)\)
bahiagrass \((Paspalum notatum)\)  yellow foxtail \((Setaria glauca)\)
itchgrass \((Rottboellia cochinchinensis)\)  vaseygrass \((Paspalum urvillei)\)
Texas panicum \((Panicum texanum)\)  Amazon sprangletop \((Leptochloa panicoides)\)
dallisgrass \((Paspalum dilatatum)\)  crowfootgrass \((Dactyloctenium aegyptium)\)
goosegrass \((Eleusine indica)\)  bermudagrass \((Cynodon dactylon)\)
large crabgrass \((Digitaria sanguinalis)\)  broadleaf signalgrass \((Brachiaria platyphylla)\)
johnsongrass \((Sorghum halepense)\)  giant foxtail \((Setaria faberi)\)
barnyardgrass (*Echinochloa crus-galli*)

- Synonyms: watergrass
- Erect growth habit
- Awned or awnless
- Leaves and leaf sheath are glabrous (hairless)
- Flattened stems
- Collar margin sometimes hairy
- Often reddish at base of plant
- Looks very similar to junglerice (*Echinochloa colona*), which often has a purple leaf band present
Grass Weed Identification
Ligule a Fringe of Hairs

yellow foxtail (*Setaria glauca*)
- Long hairs on upper side of blade near base
- Sheath glabrous and flattened
- Often reddish of base at plant
- Yellow colored seed head with 5 or more bristles per spikelet


giant foxtail (*Setaria faberi*)
- Sheath margin hairy and nearly round
- Hairs on upper leaf surface
- Nodding panicle

Texas panicum (*Panicum texanum*)
- Hairy leaves and sheaths (velvet-like)
- Prominent midrib
- Often reddish at base
crowfootgrass (*Dactyloctenium aegyptium*)

- Bending and rooting at lower nodes
- Sheath and blade usually glabrous
- Blade margins with long stiff hairs
- Rounded stem
- Seed head look’s like crow’s foot (all rachis emerge from same point i.e. digitate)

bermudagrass (*Cynodon dactylon*)

- Synonyms: wiregrass, bluegrass, bermuda
- Perennial, spreading by stolons and rhizomes
- Tuft of erect hairs on sheath margins at collar
- Also a turfgrass

broadleaf signalgrass (*Brachiaria platyphylla*)

- Synonyms: brachiaria
- Decumbent, spreading, branched, bent and rooting at nodes
- Leaf blades short and wide with crease at tip
- Leaf sheaths hairy, blades glabrous
- Leaf margins with distinct hairs
- Often reddish at base
- Sheath round
Key to Grass Weed Identification
Ligule a Fringe of Hairs
**Grass Weed Identification**

**Membranous Ligule**

**red rice** (*Oryza sativa*)
- Leaf sheath glabrous
- Leaf blade rough to touch (scabrous) when compared with white rice
- Ligule 15mm long and pointed
- Well developed auricles
- Red pericarp

**itchgrass** (*Rottboellia cochinchinensis*)
- Synonyms: raoulgrass, raoul
- Sheath and blade with long, stiff hairs
- Seed heads pencil-like (or barrel shaped) and jointed

**Amazon sprangletop** (*Leptochloa panicoides*)
- Synonyms: tighthead sprangletop
- Blade usually smooth
- Long, narrow panicle, keeled sheath
- Long toothed ligule
- Green midrib
goosegrass (*Eleusine indica*)

- Leaf sheath margins broad, whitish to translucent
- Flattened leaf sheath
- Seedlings erect, plants later develop a prostrate growth habit

large crabgrass (*Digitaria sanguinalis*)

- Sheath and blades densely hairy
- Prostrate spreading growth habit
- Rooting at nodes

johnsongrass (*Sorghum halepense*)

- Perennial, spreading by rhizomes
- Leaf sheath and blades glabrous
- Toothed ligule
- Sheath round
- Often see red spots on leaves from disease
- Open panicle
- May appear purple in early spring
Key to Grass Weed Identification

Membranous Ligule
D. Nutsedge Identification

- Nutsedges all have a triangular stem rather than a round or flattened stem as is found in grasses. Sedges also are often characterized by a dark green, glossy appearance.
- Nutsedges can be perennials that produce tubers (yellow and purple nutsedge) or annuals (annual sedge of which rice flatsedge is an example).
- Purple nutsedge (*Cyperus rotundus*) is considered the most problematic weed in the world.
- Some weed scientists believe the smell and taste of the tubers can be used to distinguish between species. For sure the tubers of purple and yellow nutsedge differ in appearance.
- You will be responsible for identifying the following sedges:

  - yellow nutsedge (*Cyperus esculentis*)
  - purple nutsedge (*Cyperus rotundus*)
  - rice flatsedge (*Cyperus iria*)

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**Key to Nutsedge Identification**

![Diagram of Nutsedge Identification Key]
Nutsedge Identification

yellow nutsedge (Cyperus esculentis)

- Synonyms: yellow nutgrass, cocogras, chufa
- Perennial
- Produces single, nut-like tubers at tips of rhizomes
- Tubers sweet to taste and smooth
- Blade is glabrous and sheath triangular
- Three ranked leaves gradually tapering to a sharp point
- Yellow seed head, with spikelets held tightly

purple nutsedge (Cyperus rotundus)

- Synonyms: cocograss, purple nutgrass
- The most problematic weed in the world
- Perennial
- Produces multiple nut-like tubers in chains on rhizomes
- Blade is glabrous and stem is triangular
- Three-ranked leaves abruptly tapering at tip (dagger shaped)
- Purple seedhead
- Tubers have a bitter taste and are rough

rice flatsedge (Cyperus iria)

- Synonyms: annual sedge
- Annual – produces no tubers
- Blade is glabrous and sheath is triangular
- Three-ranked leaves gradually tapering to a sharp point
- Golden brown seedhead
- Multiple fruiting stems from base
- Spikes tufted
- Distinct odor “Christmas tree like”