

## Weeds Identified in the Body of the Manual

Common Name	Scientific Name	Life Cycle
Rescuegrass	<i>Bromus catharticus</i>	Winter Annual
Downy Brome	<i>Bromus tectorum</i>	Winter Annual
The Mustards		
* Tansymustard	<i>Descurainia pinnata</i>	Winter Annual
* Shepherdspurse	<i>Capsella bursa-pastoris</i>	Winter Annual
* London Rocket	<i>Sisymbrium irio</i>	Winter Annual
Ivy-leaf Morningglory	<i>Ipomoea hederacea</i>	Annual
Barnyardgrass	<i>Echinochloa crusgalli</i>	Summer Annual
Common Purslane	<i>Portulaca oleracea</i>	Summer Annual
Common Lambsquarters	<i>Chenopodium album</i>	Summer Annual
Crabgrass	<i>Digitaria sanguinalis</i>	Summer Annual
Dodder	<i>Cuscuta</i> (spp.)	Annual
Field Sandbur	<i>Cenchrus pauciflorus</i>	Summer Annual
Foxtail		
* Green	<i>Setaria viridis</i>	Summer Annual
* Yellow	<i>Setaria glauca</i>	Summer Annual
Jointed Goatgrass	<i>Aegilops cylindrica</i>	Summer Annual
Kochia	<i>Kochia scoparia</i>	Summer Annual
Pigweed species	<i>Amaranthus</i> (spp.)	Summer Annual
Puncturevine	<i>Tribulus terrestris</i>	Summer Annual
Spotted Spurge	<i>Euphorbia maculata</i>	Summer Annual
Russian Thistle	<i>Salsola kali</i>	Summer Annual
Spurred Anoda	<i>Anoda cristata</i>	Summer Annual
Common Mallow	<i>Malva neglecta</i>	Annual/Biennial
Dandelion	<i>Taraxacum officinale</i>	Perennial
Plantain	<i>Plantago major</i>	Perennial
Bermudagrass	<i>Cynodon dactylon</i>	Perennial
Johnsongrass	<i>Sorghum halepense</i>	Perennial
Nutsedge		
* Yellow	<i>Cyperus esculentus</i>	Perennial
* Purple	<i>Cyperus rotundus</i>	Perennial
Field Bindweed	<i>Convolvulus arvensis</i>	Perennial
Silverleaf Nightshade	<i>Solanum elaeagnifolium</i>	Perennial
Musk Thistle	<i>Cardus nutanis</i>	Biennial
Texas Blueweed	<i>Helianthus ciliaris</i>	Perennial

**Rescue Brome**, rescue grass  
Grass Family - Gramineae

**Rescue Brome - *Bromus catharticus* Vahl.**

**Description** - Rescue brome is an annual, a winter annual, or biennial, 1/2 to 3 feet high, which reproduces only by seeds. It has thin flattish leaves, 1/8 to 1/3 inch broad. The flowering part is branched, and up to 8 inches long. The spikelets are large, 3/4 to 1 1/4 inch long, strongly flattened and composed of 6 to 12 sharply folded, overlapping flowering bracts, which may or may not end in a stiff bristle. The grain is about 3/8 inch long. Flowering from late February to September.

**Distribution** - A native of South America, rescue brome is principally a weed in lawns, gardens, roadsides, ditchbanks, and small grain winter crops.

**Red Brome, foxtail brome, foxtail chess - *Bromus rubens* L.**

**Description** - A spring annual, 1/2 to 1 1/3 feet high with the flowering part erect, 1 1/2 to 3 1/2 inches long and crowded. The spikelets, about 1 inch long, have 4 to 11 flowering bracts, each ending in a reddish brown bristle about 3/4 inch long. Flowering March to June.

**Distribution** - Red brome is troublesome, principally on overgrazed rangelands 1,300 to 5,500 feet elevation.



Rescue brome (*Bromus catharticus*). Plant and flowering branch. a. Spikelet. b. Grain.

**Downy Brome, Downy chess, Cheatgrass**  
Grass Family - Gramineae

**Downy Brome - (*Bromus tectorum*) L.**

**Description** - Winter annual, reproducing by seeds. Culms erect or spreading slender, 0.2-1 m. tall; Leaves, both blades and sheaths, light-green, covered with long soft hairs; Panicle rather dense, soft, very drooping, often purplish, flowering in April-May, 0.5-2 dm. long with spreading or recurving flexuous branches, the branches often with several spikelets; Spikelets 2-3.5 cm. long, including awns (1-1.7 cm. long); Glumes sparsely pilose; Lemmas slenderly 5- to 7-nerved, hispid, bearing long beards, 1-1.5 cm. long; Caryopsis long and narrow. Maturing in May-June.

**Distriution** - Meadows, pastures, ranges, small grainfields, wastelands, and roadsides; often too abundant. Throughout all the United States excepting the extreme southeastern area.



-*Bromus tectorum* L. Downy brome. A, Habit— $\times 0.5$ ; B, spikelet— $\times 4$ ; C, ligules— $\times 2.5$ ; D, floret— $\times 5$ .

**Tansymustard**

Mustard Family - Cruciferae

**Tansymustard** - *Descurainia pinnata* (Walt.) Britt.

**Description** - An erect annual or winter annual, 1/2 to 3 feet high, which reproduces only by seeds. The plants are usually ash colored from the many short soft, forked or starlike hairs, or they may be only moderately hairy and green. The stems are often purplish. The alternate leaves are divided once or twice into fine segments, 1 to 4 inches long.

The tiny flowers, about 1/12 inch long, are yellow or whitish, and on short slender spreading stalks, which elongate as the pods mature. They occur along the upper part of the stems. The short narrow seedpods are somewhat stubby, 1/4 to 1/2 inch long, and have 2 rows of seeds in each half. The tiny oblong seeds are dull red, about 1/25 inch long, and have a groove on 1 side.

**Distribution** - Tansymustard is a native weed which is abundant in moist spots sandy, rock, or disturbed soil of riverbeds, washes, mesas, canyons, slopes, and swales in creosote desert, grassland, sagebrush, oak, and pinyon-juniper associations. It is also a troublesome weed in cultivated lands, grain fields, city streets, and waste places; 100 to 7,000 feet elevation; flowering December to August, mostly March and April at the lower elevations.

**Poisonous Properties** - Tansymustard contains no known poisonous principles, but may cause trouble under certain conditions. These plants appear on the ranges in abundance in early spring, and livestock may eat them almost exclusively. Animals may be unable to eat or drink, as a result of eating large quantities over a long period of time. The pods are also relished by livestock. The mature seeds are rich in oil of mustard.

**Flixweed** - *Descurainia sophia* (L.) Wats.

**Description** - Similar to tansymustard, but with much more finely divided leaves, brighter green and less hairy. The pods are much longer, 3/4 to 1 1/3 inch long, and very narrow; the seeds are in 1 row in each half.

**Distribution** - Introduced from Eurasia, flixweed is found in the same type of places with the same general distribution as tansymustard, but is not as abundant except in some local areas; flowering mostly March to May.



Tansymustard (*Descurainia pinnata*). Flowering plant.  
a. View of portion of seedpod showing seed attachment. b. Seedpod. c. Seed.

**Shepherdspurse**

Mustard Family - Cruciferea

**Shepherdspurse - *Capsella bursa-pastoris* (L) Medic.**

**Description** - An erect annual or winter annual, 1/4 to 1 1/2 feet high, which has a thin taproot, and reproduces only by seeds. The slender stems, usually branching, are sparingly covered by long gray hairs. A spreading rosette of leaves is formed first on the ground. These leaves are variously toothed, cut or deeply lobed, often with a larger lobe at the tip, and 1 1/2 to 5 inches long including the stalk. The stem leaves are alternate, often arrowshaped, with smooth or toothed edges. These leaves are without stalks, and clasp the stem with an earlike lobe on either side.

The small white flowers, with petals only 1/12 to 1/8 inch long, are on slender stalks which elongate as the pods mature. They occur along the upper leafless part of the stems, but the pods often are found almost throughout the length of the stem.

The flat seedpods are inverted, heartshaped, or triangular, with the broad notched end on top, and narrowed to a point at the base, about 1/4 inch broad. The tiny reddish or orange brown seeds are oblong, shiny, about 1/25 inch long, with a groove down each face.

**Distribution** - A European introduction, Shepherdspurse is common. It is primarily a lawn pest, but is also very common in cultivated crops, orchards, pastures, and roadsides or waste places near them; 100 to 8,000 feet elevation; flowering practically the year around in moist cultivated fields in the low valleys or at the higher elevations, but usually disappearing in May in dry, low elevation areas.



Shepherdspurse (*Capsella bursa-pastoris*). Plant with flowers and fruits and two enlarged leaves showing variation. a. Flower b. Seedpod, enlarged c. Seed

**London Rocket**

Mustard Family - Cruciferea

**London Rocket - *Sisymbrium Irio* L.**

**Description** - A bright green fleshy annual or winter annual, hairless or with a few hairs near the base. The stems are usually much branched from the base 1 to 3 feet high, from a coarse taproot, and reproducing by seeds only. The dark green divided leaves are 1 to 8 inches long including the stalk, with a large pointed terminal lobe, and 1 to 4 pairs of smaller lobes below. The divisions of the upper leaves are almost as large as those on the lower.

The small yellow flowers, 1/12 to 1/8 inch long, are borne on slender stalks in small clusters at the stem tips. The flowers stems elongate as the seedpods mature, so there are many, spreading, very narrow pods below the flower clusters. The mature seedpods are 1 1/2 to 2 inches long. The tiny reddish brown oblong seeds are 1/16 inch long, with a ridge and two depressions on each face.

**Distribution** - London rocket is a native European weed. It is abundant throughout irrigated lands in alfalfa, small grains, gardens, orchards, pastures, roadsides, and waste places; 100 to 4,500 feet elevations; flowering December to May, of all summer and fall in moist soil of cultivated fields.

One of the first green weeds to appear in the winter, London rocket usually disappears, except in moist shaded places, when the weather becomes hot. It is a prolific seeder.



London rocket (*Sisymbrium Irio*). Plant in flower and in fruit. Also, fruiting branch. a. Flower b. Fruit or seedpod c. Seed

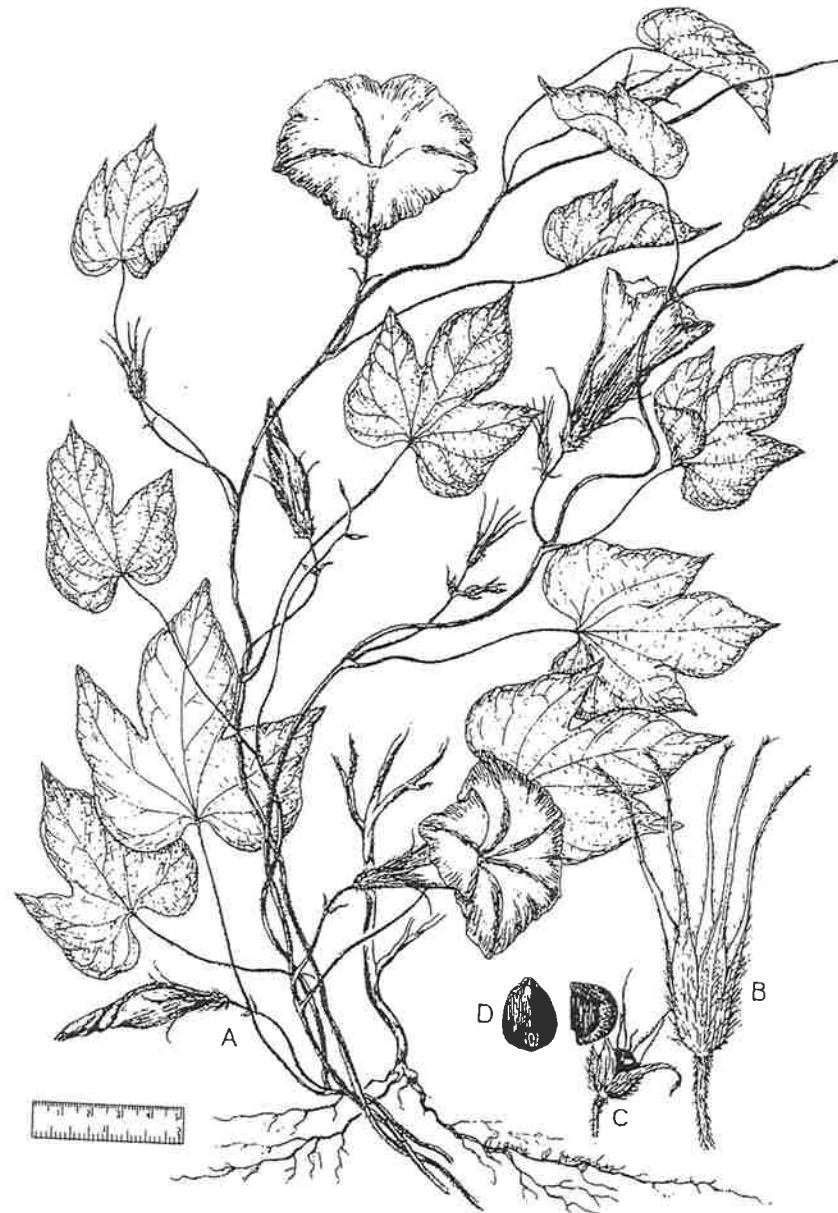
**Ivyleaf Moringlory**

Herb Family - Convolvulaceae

**Ivyleaf Moringlory - *Ipomoea hederacea* L. Jacq**

**Description** - Annual herb, reproducing by seed; Stems hairy, twining or spreading on the ground, 1-2 m long; Leaves 3-lobed, occasionally 5-lobed, deeply heart-shaped with rounded basal lobes, 5-12 cm. wide and long; Peduncles shorter than or equaling the petioles below, bearing 1-3 flowers; Flowers funnel-shaped, sessile or short-pedicelled, the corolla 3-5 cm. long, pale to sky-blue when fresh, quickly changing to rose-purple, with a white a white tube; Sepals lanceolate, 15-25 mm. long, narrowed from below the middle into a slender, linear, recurved tip, densely hairy or bristly; Capsule egg-shaped, partly covered by the calyx, usually with 4-6 seeds; Seed about 6 mm. long, dark-brown to black, with 1 rounded and 2 flattened sides. July-October.

**Distribution** - Gardens, fields, and waste places; a trouble-some weed in cultivated fields, especially in corn and soybean, where it ties the plants together before harvest. Naturalized from tropical America. Throughout all the Eastern, Southeastern, Central and Southwestern United States; north into Ontario.



*Ipomoea hederacea* (L.) Jacq. Ivyleaf morningglory. A, Habit— $\times 0.5$ ; B, sepals— $\times 1.5$ ; C, capsule— $\times 2$ ; D, seeds— $\times 5$ .

**Barnyardgrass**

Grass Family - Gramineae

**Barnyardgrass** - *Echinochloa crusgalli* (L.) Beauv.

**Description** - A stout summer annual, 1/2 to over 4 feet high, which reproduces only by seed. It is often spreading and prostrate at the base, rooting at the lower nodes, sometimes forming large clumps.

The hairless leaves are dense, with blades 4 to 20 inches long, and 1/4 to 3/4 inch broad. The flowering tops are 3 to 8 or 10 inches long, with the erect branches 1 to 2 1/4 inches long.

The green or purplish spikelets, about 1/8 inch long (excluding the bristle when present), are densely and irregularly crowded on the branches, and almost without stalks. They typically are stiff hairy and short awned to sharp pointed at the tip, but sometimes ending in a bristle up to 1 1/2 inches long.

The pale yellow, shiny grain is flat on one side and round on the other. A single plant has been estimated to produce as many as 40,000 grains.

**Distribution** - Barnyardgrass is a European introduction that has become a most troublesome weed in moist soil in all agricultural areas in the state. It is common in irrigated fields, orchards, pastures, roadside swales, reservoirs, ditches, and streams, 100 to 7,000 feet elevation; flowering June to October. The name "crabgrass" should not be applied to this grass since that is the accepted name for *Digitaria* spp.



Barnyardgrass (*Echinochloa crusgalli*). Flowering plant  
 a. Spikelet spread open b. Two spikelets with short and long awn c. Grain



**Common Purslane**, pursley, pusley, wild portulaca  
 Purslane Family - Portulacaceae

**Common Purslane** - *Portulaca oleracea* L.

**Description** - A smooth fleshy annual reproducing by seeds, closely resembling horse purslane, with which it is often confused. The many branched stems are reddish and prostrate, 1/2 to 2 feet long, and often form mats with the tips turned upward. Sometimes the stems are ascending and nearly erect. The small thick leaves are alternate, not opposite as in horse purslane, either solitary or clustered, and spatulashaped with the tips rounded.

The small stalkless flowers, as in horse purslane, occur singly or several together in the leaf and branch axis and stem tips. They also open only in the mornings, but are yellow, not purplish. There are 7 to 12 or 20 stamens.

The seed pod is globeshaped, the upper half of which, with the 2-cleft only on top, falls away as a lid when the many tiny seeds are mature. the black seeds, broadly eggshaped but flattened, are less than 1/25 inch long with a white spot at the scar.

**Distribution** - Introduced from Europe, common purslane is abundant. It is a pest in lettuce, sugar beets, carrots, and citrus; also common on overgrazed eroded areas, on mountain slopes and meadows; 100 to 8,500 feet elevation; flowering April to June and August to about November.



Common purslane (*Portulaca oleracea*). Flowering plant a. Flower b. Seed.

**Common Lambsquarters**

Cooseroot Family - Chenopodiaceae

Common Lambsquarters - *Chenopodium album* L.

**Description** - Common lambsquarters is a pale green annual with one main stem of several, 1 to 4 or 6 feet high, which reproduces by seeds. The plant is more or less white mealy throughout, particularly the flowers, and usually the lower sides of the leaves. The variable leaves may be lanceshaped and smoothedged, or somewhat egg or wedgeshaped, with a pair of lobes at the base, and often with toothed margins. The leaves are alternate, 1 to 5 inches long, and 1/2 to 2 inches broad.

The small inconspicuous greenish flowers are stalkless, arranged in crowded clusters on the short flower clusters at the tips of the stem branches. The black seed is persistently enclosed by the thin membranous fruit wall, which gives it a dull appearance. If this membrane is scraped away, the seed is shiny and glossy, about 1/16 inch in diameter, and diskshaped, with a notch on one side.

**Distribution** - Lambsquarters is a nuisance in irrigated lands and cultivated crops. It is also found on river bottoms and croded areas of overgrazed ranges, brush burns or logged forest openings, in the desert or desert grassland, pinyon - juniper and yellow pine: 100 to 9,500 feet elevation; flowering from early summer to fall, May to October. A native of Europe, this weed is good livestock feed.



Common lambsquarters (*Chenopodium album*).  
Flowering plant. a. Enlarged leaf. b. Enlarged seed.

**Large Crabgrass, hairy crabgrass**  
Grass Family - Gramineae

**Large Crabgrass - *Digitaria sanguinalis* (L.) Scop.**

**Description** - A weak branched summer annual which reproduces by seeds, and by stems spreading at the base and rooting at the lower joints. The flat leaf blades, 1/4 to 1/3 inch broad, and the sheaths have long stiff hairs. The flowering part is made up of 3 to 11 slender, fingerlike branches, 2 to 6 inches long, which may all arise from the same point at the stem tip (as in Bermudagrass), but usually several branches in addition arise a short distance below the tip. The small spikelets, 1/8 to 3/16 inch long, lie very close to the branch stems and come from only one

**Distribution** - Large crabgrass, introduced from Europe, is a weed of moist soil. It is particularly obnoxious in lawns, where it forms coarse basal rosettes of leaves, but also is very common in cultivated fields, along streams, ditch banks, roadsides, and washes. 100 to 6,000 feet elevation; flowering June to October.

**Smooth Crabgrass**

**Small crabgrass - *Digitaria ischaemum* (Schreb.) Muhl.**

**Description** - Similar to crabgrass, but smaller and not hairy. The bract enclosing the grain is blackish brown rather than pale yellow. A "recent" arrival in Bermuda lawns and spreading rapidly.



Large crabgrass (*Digitaria sanguinalis*). Plants with fingerlike inflorescences. a. Spikelet. b. Spikelet side view. c, d. Two views of grain or floret.

**Dodder**

Morning Glory Family - Convolvulaceae

**Dodder - *Cuscuta Spp.***

**Description** - Dodder is a parasitic, root-less, leafless annual vine with beautiful yellow or orange, stringlike, twining stems, reproducing only by seeds. The leaves are reduced to colorless scales, and the plant has no green matter. Upon germination the long slender seedling, at first dependent upon food stored in the seed, coils about an available plant to which it becomes attached by numerous suckers. It then depends upon its host for all food; should the seedling fail to reach a host, it soon dies.

The stems branch greatly, forming a network about the host and spread on to the next plant, the growing parts continually producing new suckers. Although branches of the host or the entire host may die, the only part of the vine that dies is that portion directly attached to lifeless material.

The white or cream colored flowers are bellshaped, fleshy, mostly 5-lobed, 1/12 to 1/4 inch long, and arranged in culsters along the stems. The globeshaped seedpods are thin and paperish, producing 2 to 4 seeds.

**Distribution** - Dodder is a noxious weed, sometimes parasitizing important crops, particularly alfalfa and clover, with whose seeds it is often mixed. 100 to about 5,000 feet elevation; flowering June to November, but mostly July to September.

**Field Dodder - *Cuscuta campestris* Yunck.**

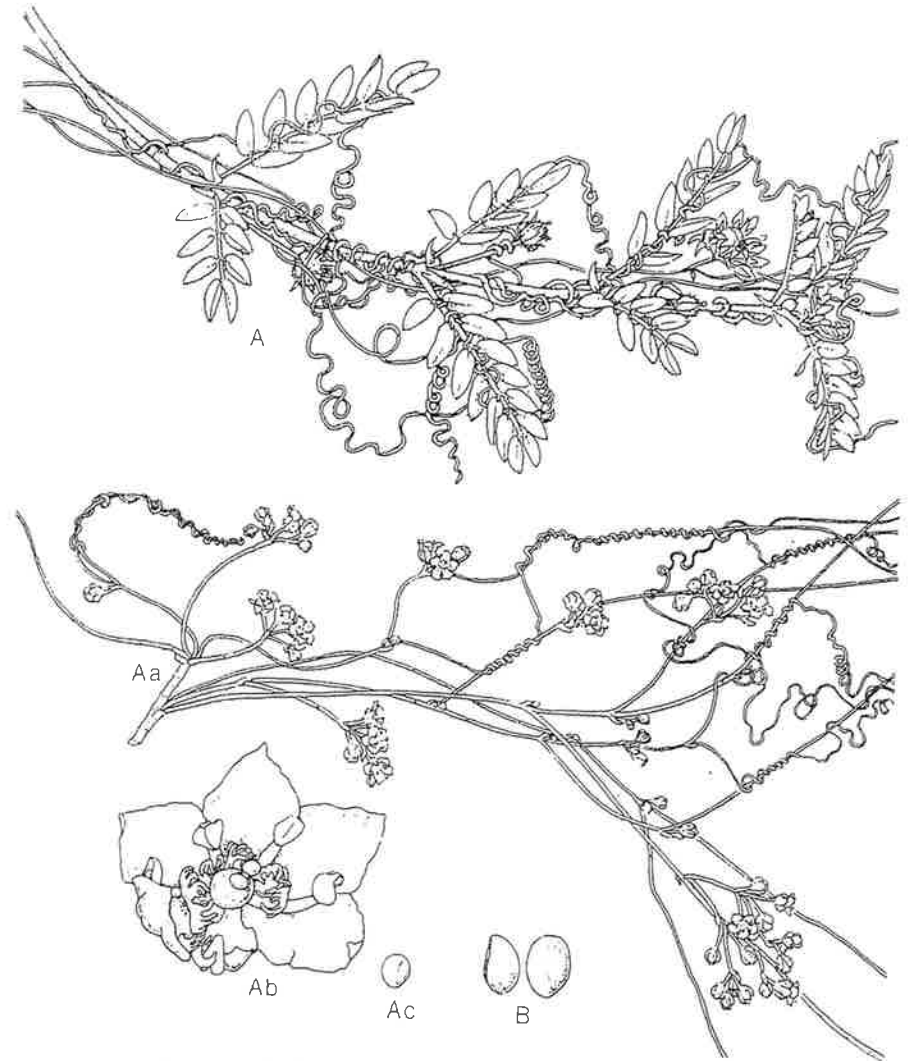
**Description** - The withered flower parts are persistent about the base of the seedpod, and the grayish tan, eggshaped seeds are 1/25 to 1/16 inch long. Growing on many hosts, but particularly on sugar beets, also alfalfa, clover, and other legumes.

**Largeseed Dodder, bigseed alfalfa dodder - *Cuscuta indecora* Choisy**

**Description** - The withered flower parts completely cover the seedpods; the reddish tan, circular seeds are 1/16 to 1/12 inch at the longest axis. Attacks woody as well as herbaceous plants, often on sunflower, goldenrod, aster, and burrobrush; frequently on legumes such as alfalfa, mesquite, and cutclaw.

**Umbrella Dodder - *Cuscuta umbellata* H.B.K.**

**Description** - The flowers are in umbrellalike clusters, with the withered flower parts wholly covering the seedpods. The greenish to reddish tan seeds are 1/25 to 1/16 inch long. Especially common on puncturevine, often covering large areas, also on cultivated beets, horse purslane, and various spiderlings and spurges.



Umbrella dodder (*Cuscuta umbellata*). A. Vine entwined on host, orange caltrop. Aa. Plant showing flowers and twining habit. Ab. Flower. Ac. Seed. B. Largeseed dodder (*C. indecora*).

**Field Sandbur**

Grass Family - Gramineae

**Field Sandbur - *Cenchrus pauciflorus* Benth.**

**Description** - Field sandbur is an erect or spreading annual, or spreading annual, or sometimes a short-lived perennial, which reproduces by seeds, and by prostrate stems rooting at the lower nodes. It sometimes forms mats, then ascends, 4 inches to 3 feet long, with a shallow root system. The leaf blades are usually flat, twisted or folded, and 2 to 5 inches long. The flowering spikes are 1 1/2 to 4 inches long, often partially enclosed by the upper leaf sheath, and are composed mostly of 3 to 15 burs, loosely arranged, but may have 20 to 30 burs, and be very tightly congested.

The spiny, hairy yellowish burs are about 1/2 inch long and mostly longer than broad. The numerous flattened spreading rigid spines, 1/8 to 1/4 inch long, often have a few curved bristles at the base. Each bur usually contains 2 seeds. There may be as many as 1,000 seeds produced by a single plant.

**Distribution** - Field sandbur is a native American weed, and is very trouble-some when the burs mature. These injure clothing as well as skin. This weed is found mostly in dry sandy soil in cultivated fields, roadsides, lawns, washes, and waste places, 100 to 6,000 feet elevation; flowering May to October, or until fall frosts.

**Southern Sandbur - *Cenchrus echinatus* L.**

**Description** - Southern sandbur closely resembles field sandbur, but the burs are reddish, mostly broader than long, and are broadest at the base. (Those of field sandbur are broadest near the center.) These have a definite ring of many short, straight bristles at the base. Each bur usually contains 4 seeds.

**Distribution** - Southern sandbur is an introduction from tropical America. It is not as widespread as field sandbur, but it is a very trouble-some weed in the late summer crops, orchards, and alfalfa fields, 100 to 4,000 feet elevation; flowering May to October, or until fall frosts.



Southern sandbur (*Cenchrus echinatus*). Plant and enlarged branch with inflorescence. a. Bur with four spikelets. b. Grain, upper and lower view. c. Bur of field sandbur (*C. pauciflorus*).

**Green Foxtail, green bristlegrass, bottlegrass**

Grass Family - Gramineae

**Green Foxtail - *Setaria viridis* (L.) Beauv.**

**Description** - Weak annuals forming spreading clumps, 1/2 to 1 3/4 or 3 feet high, reproducing only by seeds. The flattened leaf blades are usually less than 6 inches long, and 1/4 to 3/8 inch broad. The flowering part is a bristly cylindrical spike at the end of a stem 3/4 to 3 inches long. The spikelets, about 1/12 to 1/8 inch long, are densely crowded on the spike. At the base of each, there arises 1 to 3 (sometimes 4) tawny or purplish bristles, mostly 3 to 4 times longer than the spikelets. The nearly oval grains are about 1/16 inch long, greenish to dark brown and faintly wrinkled, flattened on one side and rounded on the other.

**Distribution** - Green foxtail, native of Europe, is a common weed in moist soil and is a nuisance in cultivated fields in irrigated valleys. It is also found in lawns, ditches, along roadsides, streams, and in barren spots in pine forest openings; 100 to 8,200 feet elevation; flowering June to November.

**Yellow Foxtail, Yellow Bristlegrass - *Setaria glauca* (L.) Beauv. (*S. Lutescens* {Weigel} Hubbard)**

**Description** - An annual, closely resembling green foxtail. The leaves are longer, 4 to 12 inches long, and the flowering spikes may be 4 inches long. It differs principally in that there are at least 5, and usually more (5 to 20), bristles at the base of each spikelet. The grains are about 1/12 inch long, and thick pointed at the tip.

**Distribution** - Yellow foxtail, also introduced from Europe, is found in the same type of places with the same general distribution as green bristlegrass, but is infrequent; 100 to 7,500 feet elevation; flowering July to October.



Green foxtail (*Setaria viridis*) Flowering plant. a. Two views of spikelet and two of grain. b. Yellow bristlegrass (*S. glauca*) Two views of grain and two of spikelet.

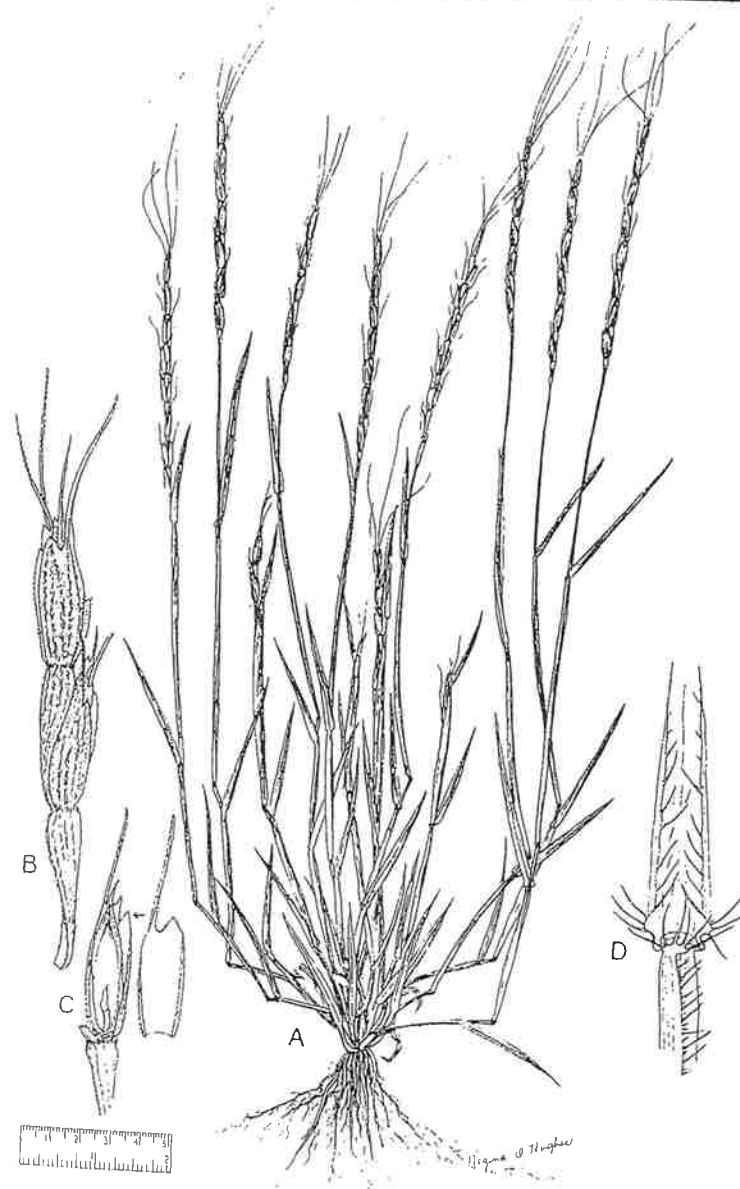
**Jointed Goatgrass**

Grass Family - Gramineae

**Jointed Goatgrass - (*Aegilops cylindrica*) host**

**Description** - Annual; Culms erect, branching at the base, 2-6 dm. tall; Root system fibrous; Leaves alternate, simple, with auricles at the base of the blade, smooth or hairy; Spike 5-8 cm, long; Spikelets few, 2-5 flowers placed with the side against the articulated rachis and closely appressed to it, the rachis joints upward enlarged; Glumes with lateral keel prolonged into an awn; Lemmas of upper spikelets with harsh awns 4-5 cm. long, those of the lower spikelets shorter; Seed ripening before wheat, shattering easily. June-August.

**Distribution** - Waste places, railroads, and fields, mainly in wheatfields, spreading to roadsides and wastes. Naturalized from Europe. Throughout approximately the south central and southwestern areas of the United States, east into Illinois and Indiana; distinct areas in Nevada, Washington, Oregon, and New York.



*Aegilops cylindrica* Host. Jointed goatgrass. A, Habit— $\times 0.5$ ; B, spike detail— $\times 2.5$ ; C, floret— $\times 2.5$ ; D, ligule— $\times 3$ .

**Kochia**

Family - Chenopodiaceae

**Kochia - *Kochia scoparia* (L.) Roth**

Description - Annual, with taproot, reproducing from seeds; Stems erect, much-branched, 3-10 dm tall, smooth but usually hairy above; Leaves alternate, simple, pubescent to nearly glabrous, 2.5-5 cm. long, lanceolate to linear, with hairy margins, without petioles; Spikes 5-100 mm. long, hairy, left bracts 3-10 mm. long; Flowers perfect, solitary or paired, small, greenish, without petals, in the axils of the upper leaves and in terminal panicles; Calyx 5-10-lobed, each lobe developing into a winglike appendage; Seed about 1.8 mm. long ovate, flattened with a groove on each side from the narrow end, finely granular, surface dull, brown with yellow markings, a fragile shell-like hull (calyx) may enclose seed. July-September.

Distribution - Waste places, ballast grounds, dry pastures, rangeland, and cropland; a drought-resistant weed serious in the Plains States; introduced as an ornamental for its bright-red autumnal color (burning bush, summer cypress); often escaped from cultivation. Naturalized from Eurasia.



*Kochia scoparia* (L.) Roth. Kochia. A, Branch of plant— $\times 0.5$ ; B, magnified branchlet, showing flowers at different stages— $\times 2.5$ ; C, rootstock— $\times 0.5$ ; D, flower— $\times 5$ ; E, fruits— $\times 5$ ; F, seeds— $\times 6$ .



**Tumble Pigweed, tumbleweed**

Pigweed Family - Amaranthaceae

**Tumble Pigweed - *Amaranthus albus* L.**

**Description** - A bushy branched annual 1/2 to 4 feet high, with light green or whitish stems, which reproduces by seeds. The bright green alternate leaves, 1 to 3 inches long and oblong or spatulashaped, are often reddish purple beneath, with the veins and margins white edged, sometimes with a short bristle at the tip.

The short greenish flowers are in short narrow clusters in the leaf axils; the 3 awlshaped spiny bracts below each flower are much longer. The little papery fruit opens by a circular line, and the top comes off like a lid. The shiny diskshaped seeds are dark reddish brown or black, about 1/25 inch in diameter, with a minutely roughened surface. At maturity the large globeshaped plants are stiff, bristly, and sticky to the touch. They often are broken off at the ground level, and carried about by the wind as a tumbleweed.

**Distribution** - Tumble pigweed is a common weed, and a pest in cotton, flax, and other cultivated fields. It also grows in river bottoms, roadsides, waste places, and eroded or rocky slopes on rangelands; 100 to 8,000 feet elevation; flowering May to November. This weed was introduced from tropical America.

**Prostrate Pigweed - *Amaranthus graecis* L.**

(A. Blitoides Wats.)

**Description** - Prostrate pigweed is very similar to tumbling pigweed. The stems, however, instead of being erect, are prostrate, forming mats on the soil 1/2 to 2 feet long, and are often pink or purplish rather than pale green. The 3 spiny bracts at the base of each flower are only slightly longer than the flowers, and the seeds are shining black.

**Distribution** - Prostrate pigweed occurs throughout the state in cultivated fields. It is also found along roadsides, river bottoms, mesas, washes, alkaline sinks, railroad tracks, and denuded areas in overgrazed ranges in mesquite, oak, or pine forests; 100 to 8,200 feet elevation; flowering May to November.



Tumble pigweed (*Amaranthus albus*). Plant habit. a. Stem with flower clusters. b. Seed emerging from papery fruit which opens by a circular line.

**Fringed Pigweed**

Pigweed Family - Amaranthaceae

**Fringed Pigweed - *Amaranthus fimbriatus* (Torr.) Benth.**

**Description** - An erect annual, sometimes bushy with many branches, 1 to 2 (or 3) feet high. The leaves are alternate, lance-shaped or somewhat egg-shaped, and pointed at the top. They have smooth edges and a short stalk, 1 to 2 inches long.

The small flowers are of 2 kinds, male and female, with both kinds on the same plant. The male flowers are few, and occur together in clusters in the leaf axils, at the stem tips, and at the top of the plant in long nearly leafless spikes. The many female flowers are very conspicuous and pretty at maturity. The 5 flower parts enlarge, and each spreads out above into a thin pinkish white papery fan-shaped structure, the edges of which are slightly fringed. This structure encloses the little thin-walled fruit, whose top falls away as a lid, shedding the tiny seed when it is mature. The oval seed is shiny, reddish black, and about 1/25 inch in diameter.

**Distribution** - Fringed pigweed is a southwestern native plant, growing in dry sandy or rocky soil of desert washes, mesas, and roadsides. It has spread into the cultivated fields, particularly in newer agricultural areas, 100 to 4,000 feet elevation; flowering July to October.



Fringed pigweed (*Amaranthus fimbriatus*). Flowering plant and branch from more robust plant showing leaf variation. a. Mature female flower. b. Seed

**Redroot pigweed**Pigweed family - *Amaranthus***Redroot pigweed - *Amaranthus retroflexus***

**Description** - An erect annual, which reproduces by seeds. The taproot is shallow and red. Stems are erect and branching occurs freely if not crowded, up to 2 m. high and is finely hairy. Leaves are a dull-green, long-petioled, egg-shaped or rhombic-ovate and is up to 1 dm. long. The flowers are green and the terminal panicle has several to many, short, densely crowded, ovoid, blunt spikes (1-5 cm. long). Smaller panicles can be produced in the upper axils. Each flower is surrounded by 3 spiny bracts, which are rigid, awl-shaped, and much exceeding the calyx, 408 mm. long. The utricles are flattened, 1.5-2 mm. long, dehiscing by a transverse line at the middle and the upper part is wrinkled. The seeds are oval in shape, notched at the narrow end, shiny-black to dark red-brown and 1-1.2 mm. in length.

**Distribution**- Redroot pigweed is a native of tropical America and is found throughout the United States. They are found in cultivated fields, yards, fenced rows, and waste grounds. A troublesome semicosmopolitan weed. It sometimes accumulates excess nitrites and thus is poisonous to cattle, causing them to bloat.



*Amaranthus retroflexus* L. Redroot pigweed. A, Habit— $\times 0.5$ ; B, pistillate spikelet— $\times 5$ ; C, utricle— $\times 5$ ; D, seeds— $\times 3$ .

**Puncturevine, bullhead, goathead**

Caltrop Family - Zygophyllaceae

Puncturevine - *Tribulus terrestris* L.

**Description** - Puncturevine is a prostrate silky hairy annual from a shallow taproot, reproducing only by seeds. The trailing stems, 1 to 5 (or to 8) feet long, branching and radiating from the root, often form dense mats several feet in diameter. Or the stems may be nearly erect where growing in competition for light. The leaves are opposite, divided into 4 to 7 pairs of oblong leaflets 1/8 to 1/2 inch long.

The bright yellow flowers, with 5 petals which are open only in the mornings, are solitary on short stalks in the axils of the leaves. The seedpod consists of a cluster of 5 flat spiny burs or nutlets, which break apart at maturity. Each nutlet or bur contains 2 to 5 seeds, and has 2 vicious spines on its back. Most of the burs are turned so they lie under the plant. The seeds may remain viable for many years until there is sufficient moisture for germination.

**Distribution** - Puncturevine is native in Europe. It is especially troublesome in lawns, citrus orchards, sorghum, alfalfa, cotton, small grain, pastures, gardens, roadsides, yards, and walks; up to 7,000 feet, but mostly at lower elevations; flowering March to October, but principally in July and August.

It appears in remarkable numbers soon after the start of the summer rains on any type of barren soil along the city streets and yards. In wet summers it is often covered by dodder (*Cuscuta* sp.). Each plant produces innumerable burs, and it is almost impossible to prevent their falling on the ground once they are mature. Home owners and their dogs probably dislike puncturevine more than any other weed because the stout spines can easily penetrate shoes, bicycle tires, and dogs' feet.



Puncture vine (*Tribulus terrestris*). Prostrate plant with flowers and fruits, or burs, the compound leaves with 4 to 7 pairs of leaflets. a. Flower. b. Fruit or seedpod, a cluster of five bony burs or nutlets. c. Single bur or nutlet containing 2 to 5 seeds.

**Spotted Spurge**

Spurge Family- Euphorbiaceae

**Spotted Spurge - *Euphorbia maculata***

**Description-** A annual herb, with a shallow taproot, reproducing by seeds, germinating late in the spring or early summer. Stem simple or branched, erect or spreading, 0.8-1m. tall with a milky juice, crisp pubescent at the young tips soon becoming glabrous and firm. Leaves oblong, oblong lanceolate 0.8-3.5 cm. long, the edges slightly toothed, borne on short petioles, with a conspicuous reddish spot or blotch; flowers solitary or clustered, with minute petals in the form of a cup, peduncle 0.5-5mm. long; seedpods on short stalks from a cuplike base, smooth, 3-lobed, ribbed, with 3 seeds; seeds 3 sided, obtusely angled, 1.1-1.6 mm. long 0.9-1.1 mm. wide, oblong, dark brown or black pitted with ridged surfaces.

**Distribution-**In gardens, cultivated fields, waste places, roadsides, dry open soils.

**Groundfig Spurge - *Euphorbia prostrata***

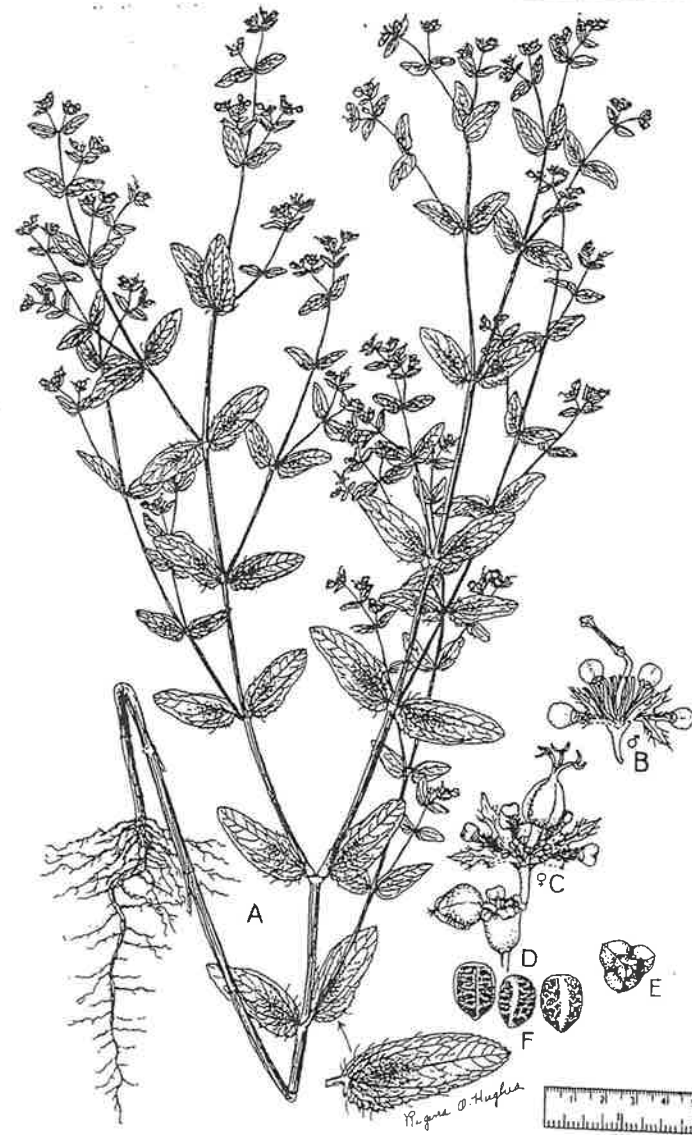
**Description -** A prostrate annual often forming mats, or sometimes partially erect where competing for light, reproducing only by seeds. The pinkish to bright red stems have short, spreading, or curved hairs. The opposite leaves, green or purplish green, are hairless above and thinly hairy beneath, 1/8 to 1/3 inch long, with smooth or finely toothed margins. The 2 scalelike stipules, usually present at the base of the leaf stalks, are lacking or very small and inconspicuous in most species of spurge.

The tiny pinkish flowers, consisting of stamens and pistils only, are grouped into small flowerlike clusters. The 3-lobed seedpods are 1/16 inch or less long, hairy only on the 3 angles, the hairs short and usually stiffly spreading or lying close to the surface on some plants. The oblong seeds, about 1/25 inch long, are sharply 4-angled, and have 6 to 8 sharp cross wrinkles on each face.

**Distribution -** Naturalized from Tropical America, groundfig spurge is one of the worst pests in summer lawns. Common to 5,500 feet elevation; flowering June to November.

**Prostrate Spurge - *Euphorbia supina***

**Description-** Very similar to groundfig spurge, but the leaves have a red blotch in the center. The stipules at the base of the leaf stalks are branched, threadlike and about 1/16 inch long. The seeds have 3 to 5 indistinct cross wrinkles on each face rather than 6 to 8 distinct ones.



*Euphorbia maculata* L. Spotted spurge. A, Habit— $\times 0.5$ ; B, staminate flower— $\times 7.5$ ; C, and D, immature capsules of the pistillate flower— $\times 7.5$ ; E, mature capsule, bottom view to show deep lobes— $\times 5$ ; F, seed, 3 views— $\times 7.5$ .

**Russian Thistle, Tumbleweed**

Goosefoot Family- Chenopodiaceae

**Russian Thistle - *Salsola kali* L. var. *tenuifolia* Tausch.**

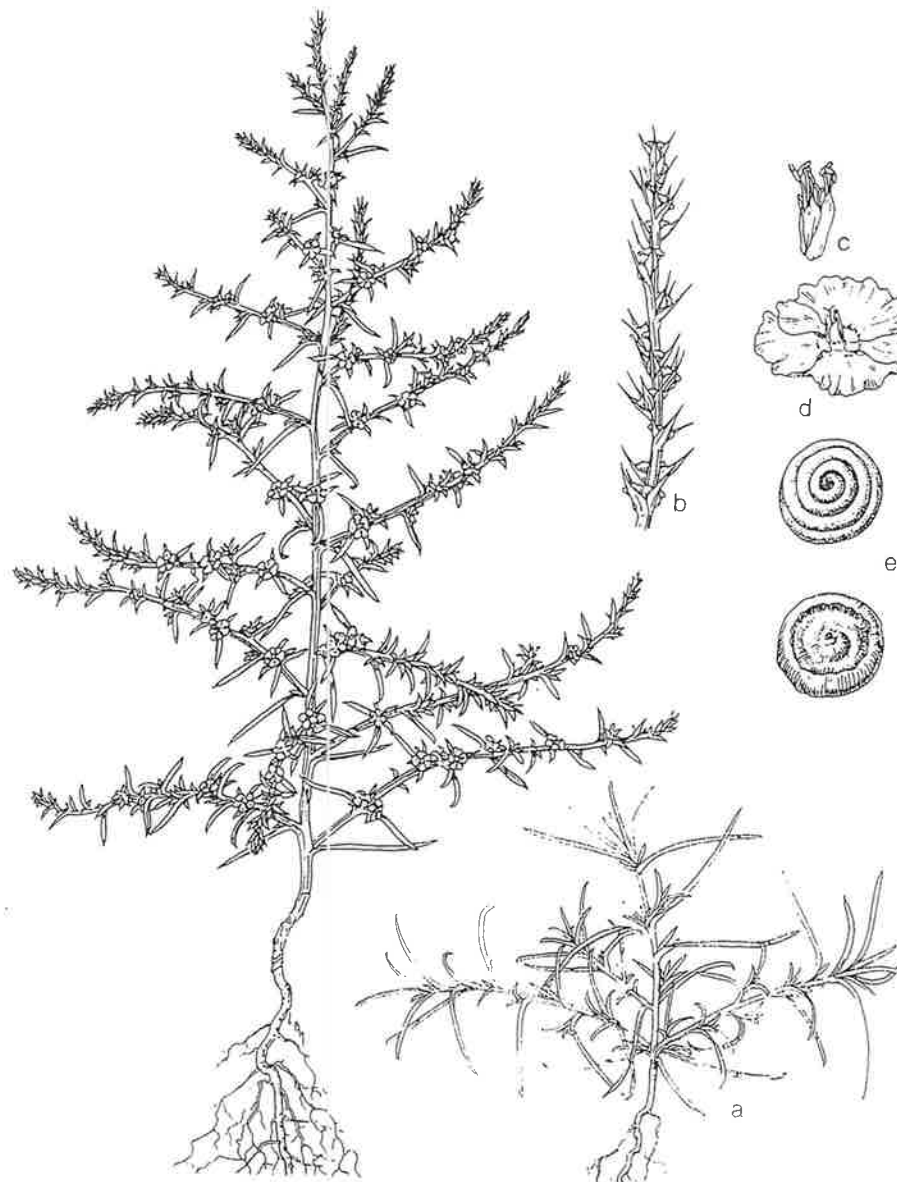
**Description** - Russian thistle is an intricately branched, bushy globular annual, 1/2 to 6 feet high, with ridged and often reddish stems, reproducing only by seed. At maturity, the hard, prickly plant breaks at the ground level, becoming a "tumbleweed." The grasslike seedlings and the young plants are fleshy and tender, with alternate, narrow pointed leaves, 1/2 to 2 inches long. These leaves drop off; the short, stiff mature leaves are awlshaped, and end in a spine.

The tiny whitish flowers are clustered at the base of the leaves along the upper branches. There are no petals, but the 5 dry flower parts enlarge, and each develops a large veiny wing. These meet to form a cover over the topshaped, reddish, slightly winged fruit. Each fruit has 1 gray to brownish yellow seed, with the coiled embryo visible.

**Distribution** - Russian thistle is one of the most prolific and obnoxious weeds throughout the state. Abundant in irrigated areas, waste grounds, and river bottoms; also common in small grains. It is very common on overgrazed ranges and pastures in grasslands, chaparral, pinyon-juniper, and frequently in yellow pine; 150 to 7,000 feet elevation; flowering May to October or November.

A native of Russia, this plant was brought into the United States in flax seed about 100 years ago, and has spread very rapidly. It is a prolific seeder: one plant may produce thousands of seeds. The seeds remain viable for years, and are scattered as the plant rolls along. It is a host plant for the sugarbeet leafhopper, which carries the virus causing curly top in beets. It is also the source of "blight" in other crop plants such as tomatoes, spinach, and beans.

**Poisonous Properties** - May store toxic amounts of nitrates after periods of fast growth.



Russian thistle (*Salsola kali* var. *tenuifolia*) Plant habit. a. Seedling b. Part of fruiting branch c. Flower d. Fringing calyx e. Seed.

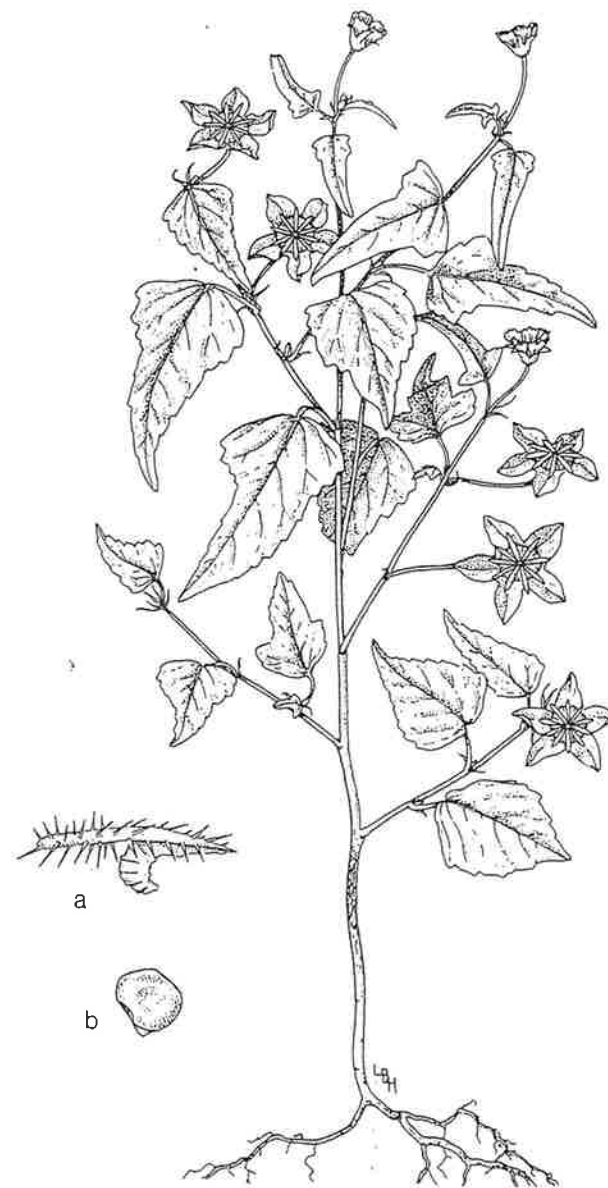
**Spurred Anoda**

Mallow Family - Malvaceae

**Spurred Anoda - *Anoda cristata* (L.) Schlecht.**

**Description** - An erect branched annual 1/4 to 3 1/2 feet high, reproducing by seeds. The leaves are alternate, with stalks 1 1/2 to 3 inches long. The blades are triangular in outline, and may be somewhat arrowhead shaped, shallowly lobed with toothed margins, or the basal ones sometimes divided into several fingerlike lobes. The large flower is solitary on a slender stalk arising at the base of the leaf stalk, and has 5 purple or bluish violet petals 3/4 to 1 inch long. The 5 green outer flower parts (the calyx) persist, their long lobes widely spreading under and greatly beyond the flattened disk of the fruit. On the disk are 9 to 20 fruit parts (carpels) which separate at maturity, each forming a seed-like pod. Each carpel has a dark hardened spur along the back, sharp pointed and spinelike at the base, extending beyond the tip into a stiff bristle, 1/12 inch or more long, and thinly covered with conspicuous yellowish hairs. The dark gray seeds are wedgeshaped, about 1/8 inch long, and prickle tipped at the narrow end.

**Distribution** - Spurred anoda is a native weed growing in moist soil, in cotton fields and other irrigated crops, gardens, ditches, and roadsides, also along streams and meadows, 2,400 to 6,500 feet elevation; flowering August to October or November.



Spurred anoda (*Anoda cristata*). Leafy plant with flowers and fruits, showing enlarged calyx extending beyond the fruit disk; also, top view of the spurs. a. Side view of a carpel with spur on the back. b. Seed.

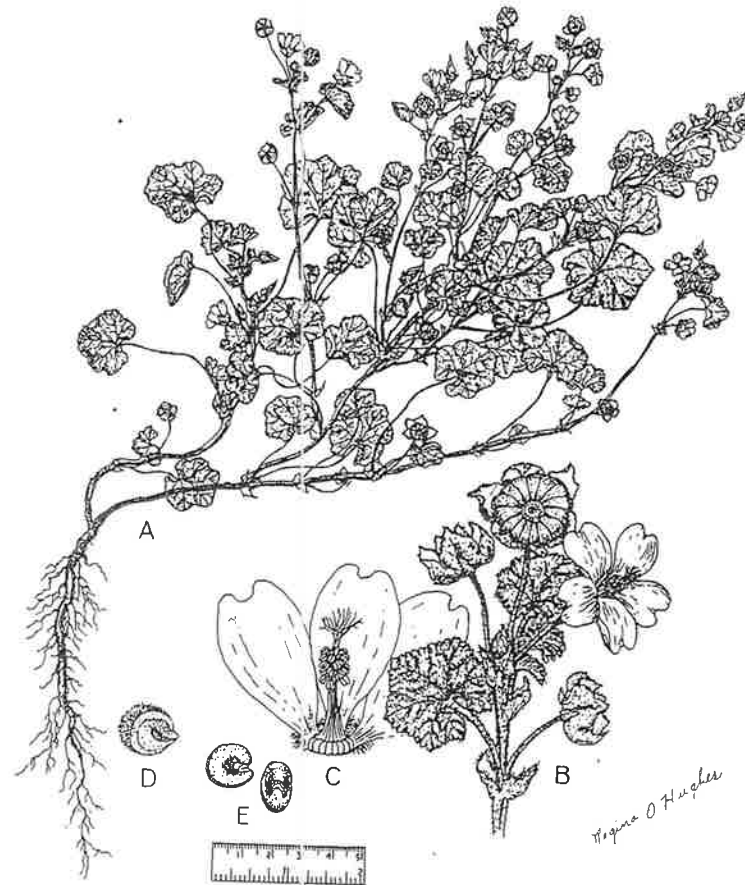
**Common Mallow**, roundleaf mallow  
Mallow Family - Malvaceae

**Common Mallow - *Malva neglecta***

**Description** - A stout, bushy annual or biennial, branched and spreading from the base, stems are spreading or nearly prostrate from a short thick taproot, reproducing only by seeds. The large soft leaves are alternate, almost circular, often with a red spot at the base, and usually 5 to 7 shallow lobes, the edges toothed. The leaves are 2 to 5 inches broad, on stalks more than 4 to 10 inches long.

The inconspicuous flowers are nearly stalkless, in small clusters at the base of the leaf stalks, and at the top of the plant. There are 5 bluish or pinkish petals about 1/3 to 2/3 inch long. The outer green flower parts or sepals persist with the 5 lobes spreading under or about the disk of 11 or 12. This disk resembles a round cheese divided into 11 or 12 sections, from which it derives one of its common names. When mature, these sections separate into 11 or 12 seedlike sections or carpels. Each carpel is almost circular, with a notch on 1 edge, one-seeded, flattened, with radiating ridges on the 2 sides and a sharply roughened back. The reddish brown seeds are similar in shape, but the surface is smooth, about 1/12 inch long.

**Distribution** - Introduced from Europe, little mallow is common throughout the state in somewhat moist loam soil. Especially troublesome in irrigated lands, alfalfa, small grains, citrus orchards, yards, ditchbanks, flower beds, waste places, and city streets; 100 to 8,500 feet elevation; flowering the year around, mostly November until June at the lower elevations. The plant and seeds are reported to cause pink egg whites when eaten by hens.



*Malva neglecta* Wallr. Common mallow. A, Habit— $\times 0.5$ ; B, enlarged branchlet— $\times 2$ ; C, flower diagram— $\times 5$ ; D, carpel— $\times 5$ ; E, seeds— $\times 5$ .



**Dandelion**

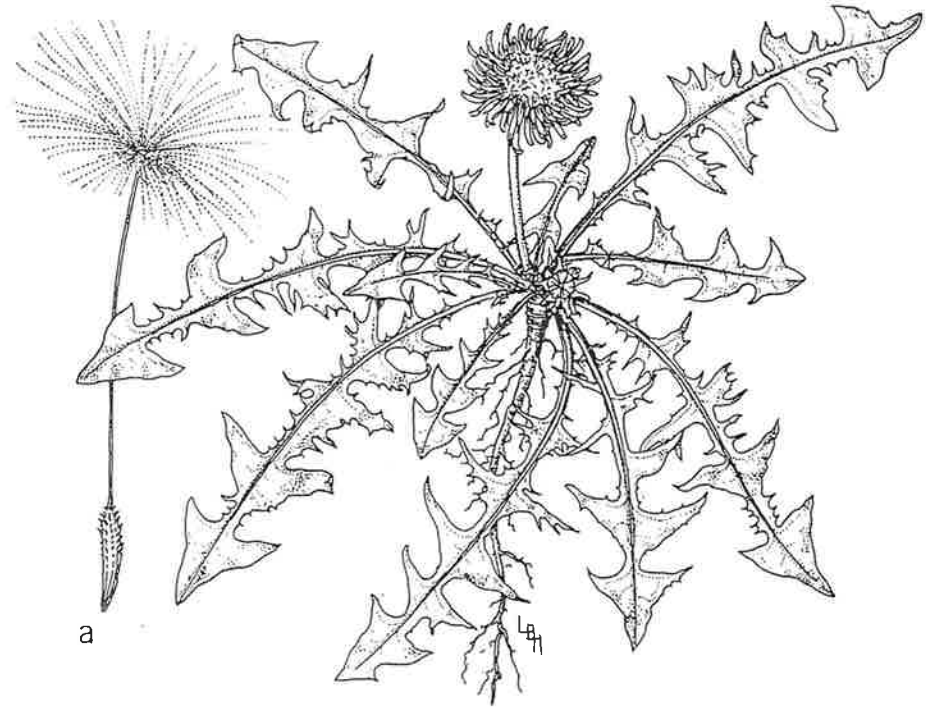
Sunflower Family - Compositae

**Dandelion - *Taraxacum officinale* Weber**

**Description** - A low tufted perennial from a long thick branched taproot, reproducing by seeds and by new shoots from the root crowns. There are no true stems, and the leaves are clustered at the base of the plant. They form a rosette on the ground, or are ascending to upright. The leaves vary greatly in size and lobing. They are from 2 to 12 inches long, and usually divided into few or several indistinct pairs of lobes, which are pointed or blunt at the tips. Often the lobe at the tip of the leaf is much larger, and triangular in shape.

The flower heads are 1 to 2 inches across, and composed entirely of golden yellow petallike flowers or rays. The flower heads are solitary at the end of long naked hollow flower stalks, which are 3 inches to 2 or more feet long. The strap-shaped ray flowers are 5-notched at the tip. There are 100 to 300 in each head. The achenes are greenish or light brown, about 1/8 inch long, 5- to 8-ribbed on each side, and minutely toothed with tiny curved spines along the upper margins. The achene ends in a long slender beak 2 or 4 times as long as the body of the achene, and is attached to a tuft of fine silky whitish parachutelike hairs which are persistent.

**Distribution** - Dandelion is a European introduction. It grows in moist places, and is a much-hated pest in lawns throughout the state. It also grows in the cultivated fields and croplands, along roadsides, in yards, gardens, pastures, and on overgrazed or eroded areas in open mountain meadows of the high mountain ranges, or in moist soil along streams in lower ranges; 100 to 9,000 feet elevation; flowering in some places almost the year around. It is good forage on the ranges, and is especially relished by sheep.



Dandelion (*Taraxacum officinale*). Tufted perennial plant with taproot, underground stem, lobed leaves forming a basal rosette; and hollow flower stalk bearing a flower head composed entirely of strapshaped ray flowers. a. Achene with tiny curved teeth on the upper margins, long slender beak topped by an umbrella-like tuft of whitish hairs.

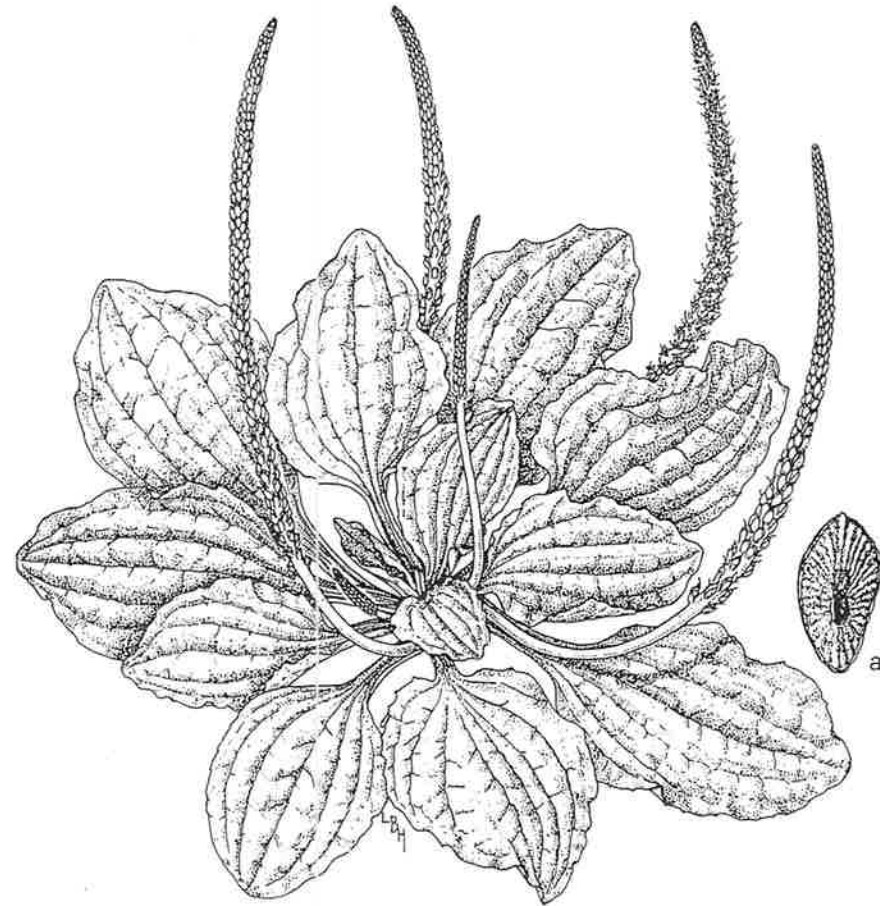
**Broadleaf Plantain, common plantain, rippleseed plantain**  
Plantain Family - Plantaginaceae

**Broadleaf Plantain - *Plantago major* L.**

**Description** - Low tufted perennial from a thick fibrous root system which reproduces by seeds and sometimes by new shoots from the roots. There are no true stems above the ground; those bearing the flower spikes are flower stalks. The large dark green hairless leaves are all at the base of the plant. The leaves are broadly eggshaped or oval, 3 to 8 inches long, on stalks 2 to 5 inches long and 2 to 4 inches broad, prominently 5- to 7-ribbed, with smooth or usually wavy to toothed margins.

The numerous whitish or colorless flowers are small, 4-lobed, thin, dry, and persistent. They are crowded along a narrow elongated spike, 3 to 12 inches long and 1/4 to 1/3 inch thick, on the upper part of the slender leafless flower stalk. The seedpods, similar to those of buckhorn plantain, contain 6 to 20 reddish brown seeds. The seeds are 1/25 to 1/16 inch long, and somewhat angled. The surface is granular, with fine radiating lines.

**Distribution** - Broadleaf plantain is a naturalized weed from Europe, and primarily a pest in lawns. It also grows in the moist soil of fields, dooryards, waste places, irrigated pastures, gardens, and along streams; 100 to 8,000 feet elevation; flowering March to October. Its tufted growth habit, large coarse leaves, and long flowering spikes are unsightly in lawns, and thus it is a particularly objectionable weed.



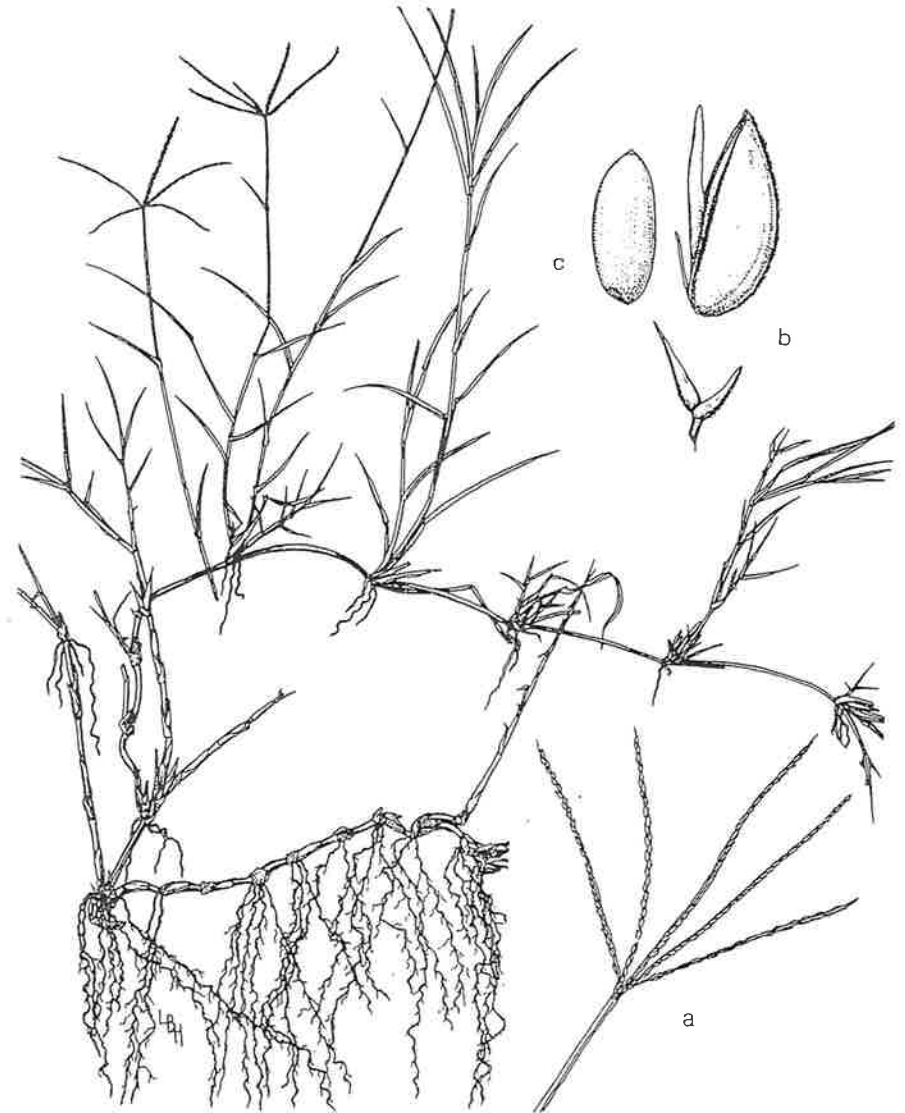
Broadleaf plantain (*Plantago major*). Leafy plant with elongated flowering and fruiting spikes. a. Seed.

**Bermudagrass, Devilgrass**  
Grass Family - Gramineae

**Bermudagrass - *Cynodon dactylon* (L.) Pers.**

**Description** - Perennial, reproducing by seed (rarely), rootstocks, and stolons; Rootstock hard, scaly, sharp-pointed, forming dense heavy sod; Stolons (stems) flat, glabrous, extensively creeping, bearing at each joint the dead bladeless sheath; Flowering culms erect or ascending, 15-45 cm tall; Leaf blades 3 mm. wide, gray-green, slightly hairy or glabrous, except for a fringe of long hair at the edge just above the collar; Sheath, often two opposite per node, sparsely hairy or hairless, strongly flattened; Ligule a conspicuous ring of white hairs; Inflorescence fingerlike, 3-7 parted, 2-7 cm. long; Spikelets in two rows tightly appressed to one side of the rachis, 2mm. Long; Lemma boat-shaped, acute, longer than the glume; Caryopsis free within the lemma and palea.

**Distribution** - Open places, pastures, and most cultivated areas; a serious weed when established; sometimes used for lawns; an important pasture grass in Southern States. Introduced from Africa. Throughout approximately the southern 2/3 of the United States, but occurring as far north as central Washington and central New York, New Hampshire, and Vermont.



Bermuda grass (*Cynodon dactylon*). Plant showing rhizomes.  
a. Enlarged inflorescence. b. Spikelet, with glumes detached below. c. Grain

**Johnsongrass**

Grass Family - Gramineae

**Johnsongrass - *Sorghum halepense* (L.) Pers.**

**Description** - It is a coarse perennial, 3 to 7 feet high, and very leafy, spreading by seeds and by an extensive system of underground rhizomes. The bright green leaf blades are up to 2 feet long, and 1/4 to 3/4 inch broad. The many-branched flowering tops are loose, open, and 1/2 to 2 feet long. The drooping branches come off 2 or 3 at a joint, and are naked below.

The spikelets occur in pairs, but in threes at the tips of the branches, 1 (or 2) is stalked and bears stamens only, while the other is stalkless, thickened, and fertile. The fertile spikelet is about 1/4 inch long, and has a twisted, once-bent bristle about 1/2 inch long. The dark reddish brown grains are nearly 1/8 inch long without the hull.

**Distribution** - Johnsongrass is one of the most abundant and vicious weeds, serious in all important summer crops. It may be found along irrigation ditches, cultivated fields, and moist waste places of any type; 100 to 6,000 feet elevation; flowering April to November. This weed can completely take over agricultural lands unless constant control methods are practiced. Its stout underground stems may be 2 1/2 feet deep, and the grains may lie dormant for many years, making complete eradication almost impossible.

**Poisonous Properties** - Johnsongrass ordinarily is good feed, but sometimes the plant, particularly the leaves, contain hydrocyanic (prussic) acid, a cyanide type of poisoning. Any factor which interrupts normal growth may cause the release of HCN within plants. Rapid growth of new leaves, wilting due to drought, frost, freezing, cutting, or trampling are the most dangerous events.



Johnsongrass (*Sorghum halepense*) Plant with stout rhizomes, also flowering branch. *a* Group of three spikelets from tip of stem (two staminate and stalked, the third fertile and awned) *b* Grain with hull

**Yellow Nutsedge, yellow nutgrass**  
Sedge Family - Cyperaceae

**Yellow Nutsedge - *Cyperus esculentus* L.**

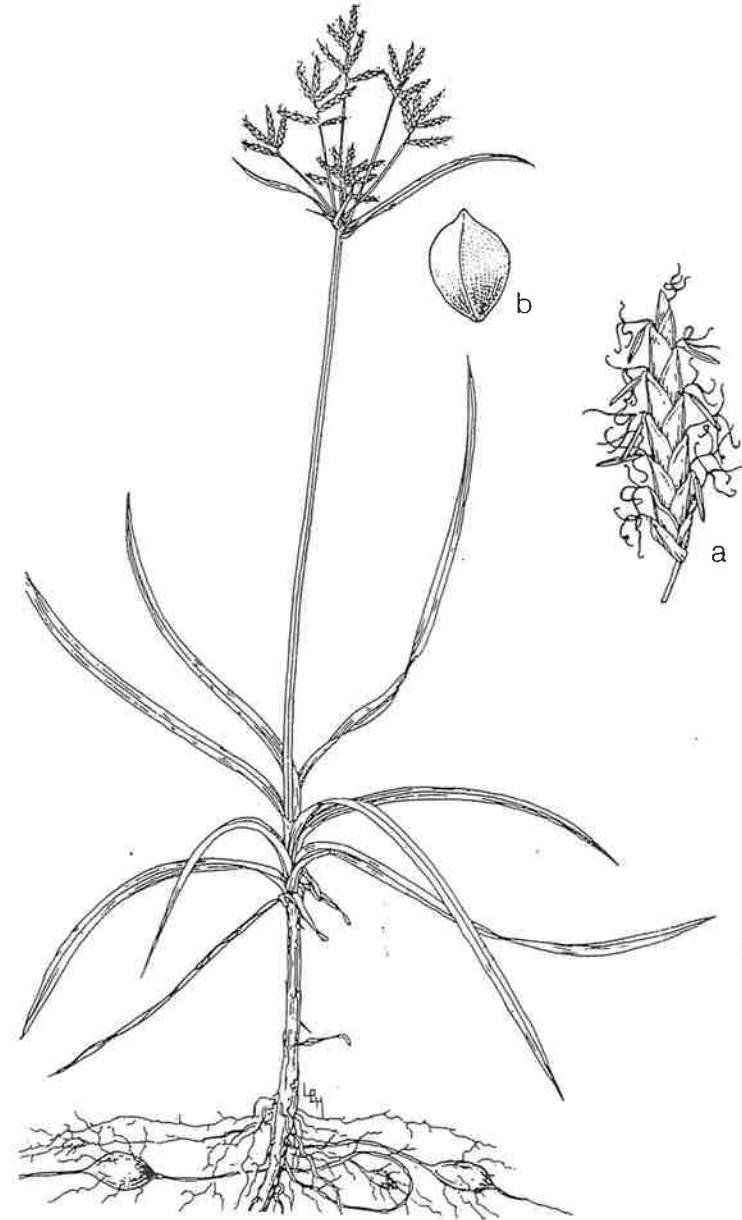
**Description** - A tough erect perennial, 1 to 3 feet high, reproducing by seeds and by many deep, very slender rhizomes which form weak runners above the ground, and small tubers or nutlets at the tips of underground stems. The tubers are dark, unevenly globeshaped, 3/8 to 3/4 inch long, and edible, tasting somewhat like almonds. Near the base of the triangular stem, a cluster of 3-ranked, grasslike leaves arises which are often longer than the stem, and 1/8 to 1/3 inch broad. The umbrellalike flowering tops have a few threadlike stems of different lengths radiating out like spokes from the stem tip. These have numerous yellowish to golden brown spikelets on the upper part. The spikelets are very narrow, flattened, 1/16 to 1/12 inch broad, and 1/4 to 1 (or 1 1/2) inch long. The leaves beneath the flowering tops are 2 to 10 inches or more long, and some are much longer than the flowering stems. The brownish 3-angled achene, about 1/16 inch long, is widest at the top.

**Distribution** - Yellow nutsedge, an Old World introduction, is a noxious weed of wet soil. The nutsedges are the most difficult weeds to control in cultivated fields, often forming a solid cover over large areas in cotton fields, sorghum and alfalfa pastures, flood plains, dams, ditches, and along streams and roadsides. 100 to 8,200 feet elevation; flowering May to November or fall frosts.

**Purple Nutsedge, purple nutgrass - *Cyperus rotundus* L.**

**Description** - Purple nutsedge closely resembles yellow nutsedge, but the mature stems are usually longer than the basal leaves. The leaves below the flowering heads, 1 to 5 inches long, are about the same length as the flower stems, few are longer. The spikelets are dark brown-purple, and the runners are fewer, woody, and thicker. The nutlets are oblong and covered by persistent reddish scales, whereas they are almost smooth in yellow nutsedge at maturity, and unevenly globose.

**Distribution** - 100 to 4,000 feet elevation; flowering from May to fall frosts. In all summer crops, in lawns, ditchbanks, and field borders; the rhizomes, runners, and tubers make the nutsedges almost impossible to eradicate.



Purple nutsedge (*Cyperus rotundus*). Flowering plant showing some of the underground stems with nutlets or tubers at the tip: a. Spikelet in flower. b. Achene.

**Field Bindweed**

Morning Glory Family - Convolvulaceae

**Field Bindweed - *Convolvulus arvensis* L.**

**Description** - Field bindweed is a prostrate perennial from a thick, branching, deeply penetrating taproot, which reproduces by seeds and by extensive horizontal roots and rhizomes. The slender stems, twinning or trailing on the ground, are 1 to 3 (or 10) feet long. The leaves are alternate on stalks 1/4 to 3/4 inch long. The leaf blades are eggshaped with the base squarish, heartshaped, arrowshaped, or the 2 lobes pointed outward. They are 1/2 to 1 7/8 inches long, 2/3 to 1 inch broad, and usually roundish at the tip.

The funnelshaped flowers are white or pink, 2/3 to 1 inch long, and 3/4 to 1 inch across. They occur singly (sometimes 2 or 3) on stalks 1 to 2 inches long in the leaf axils. A pair of narrow pointed bracts 1/8 to 1/4 inch long occur on the flower stalks 1/2 to 1 inch below the flower.

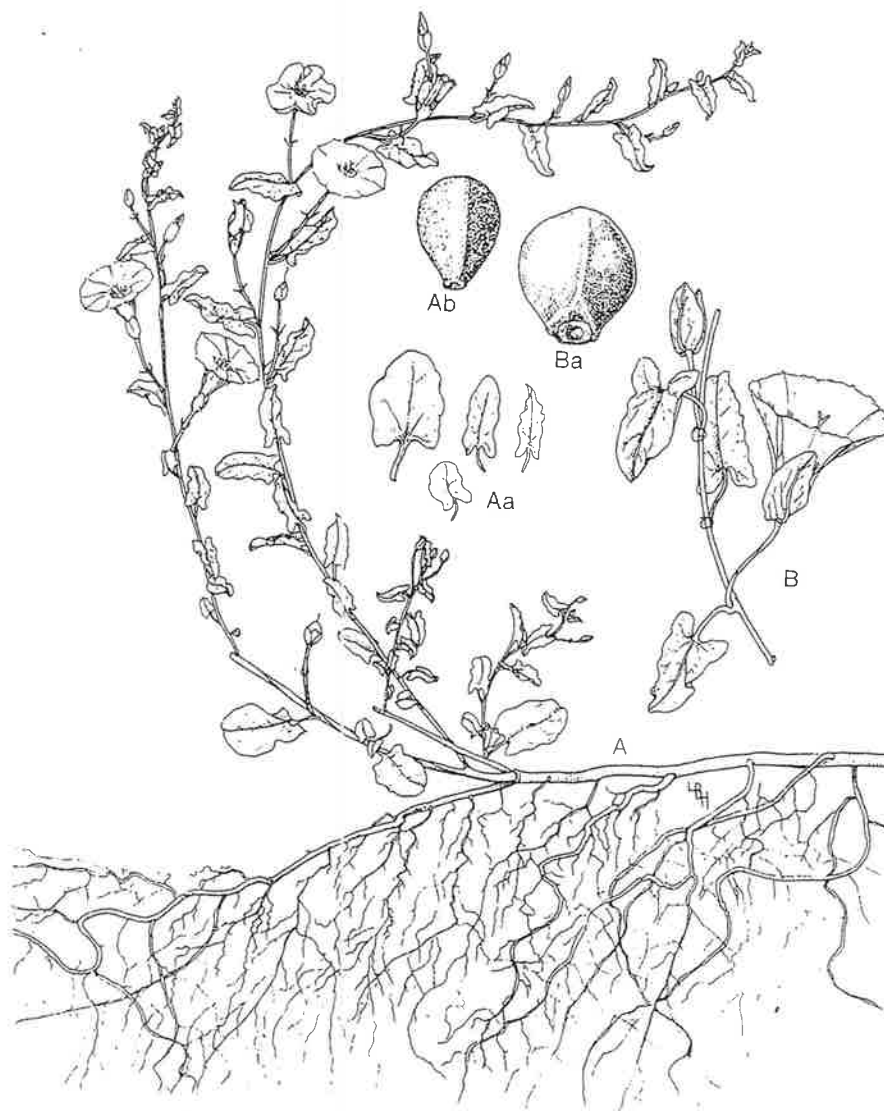
The globeshaped, point-tipped seedpods contain 4 chocolate brown seeds. These are somewhat eggshaped, the surface roughened, 3-angled, or flat on 1 side, rounded on the other, and 1/8 to 1/5 inch long.

**Distribution** - Introduced from Europe, field bindweed grows mostly in dry soil along roadsides, in open fields or edges of cultivated field, pasture, on fences, yards, and waste places of farms. Also found in alfalfa, small grains, cotton, and sorghum. Common throughout the state; 100 to 8,500 feet elevation; flowering March to November. Considered the most noxious of all weeds in several western and Midwestern states, this drought resistant plant with its unusual root system is almost impossible to eradicate from an infested area.

**Hedge Bindweed - *Convolvulus sepium* L.**

**Description** - Similar to field bindweed, but the 2 bracts are larger, 1/2 to 1 inch long and are immediately below the flower. The flowers are larger, 1 1/2 to 2 1/2 inches long, and the leaves also are larger, 2 1/2 to 3 1/2 inches long.

**Distribution** - 6,000 to 7,000 feet elevation; flowering June to August.



A Field bindweed (*Convolvulus arvensis*). Prostrate plant with both flowers and seedpods. Aa, Various shapes of leaves. Ab, Seed  
B Hedge bindweed (*C. sepium*). Branch with flower. Ba Seed.

Silverleaf Nightshade, white horsenettle, trompillo  
Potato Family Solanaceae

Silverleaf Nightshade - *Solanum elaeagnifolium* Cav.

**Description** - Silverleaf nightshade is an upright silvery perennial, usually prickly, 1 to 3 feet high, which reproduces by seeds and by deeply penetrating or creeping rhizomes. The surface of the entire of the entire plant is covered by densely matted, tiny starlike hairs, which give its characteristic silvery color.

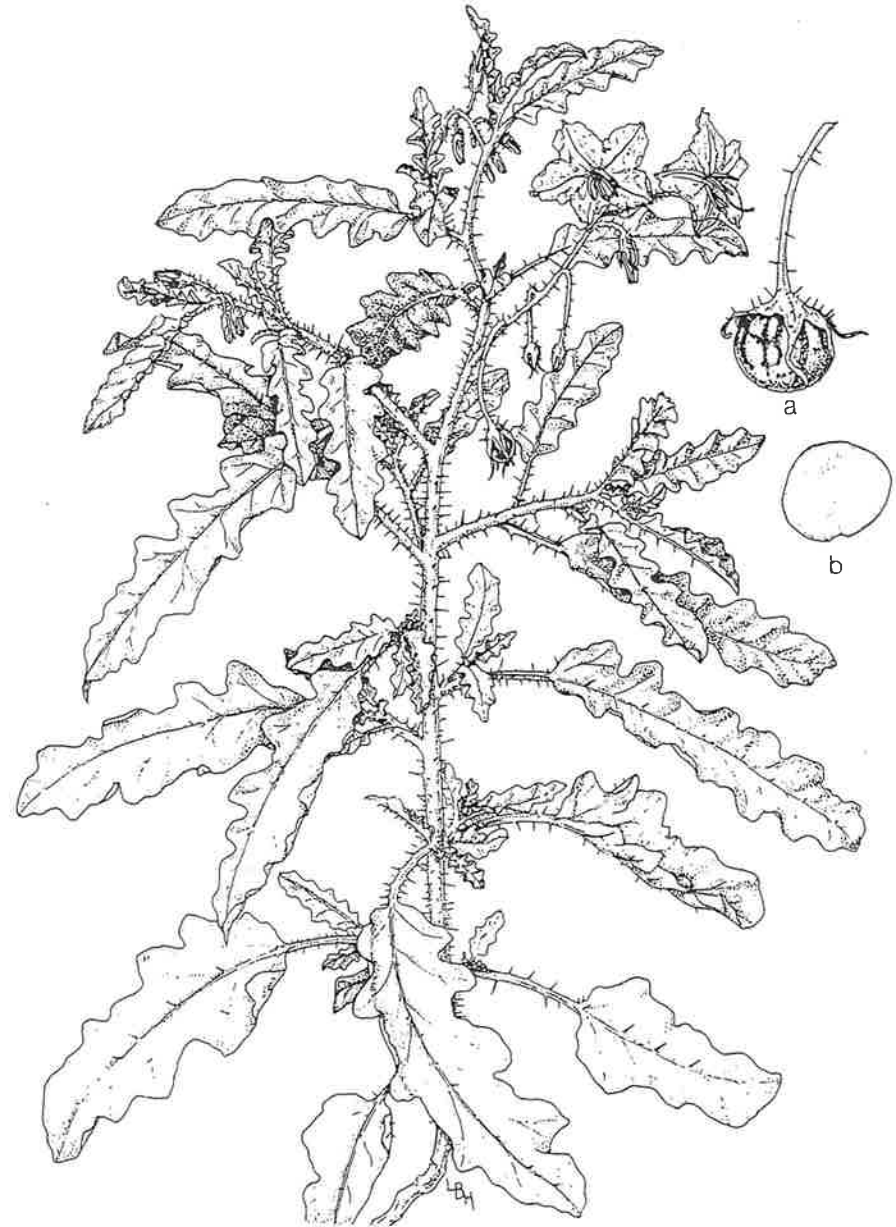
The stems, leaves, and flower stalks may all bear slender yellowish spines; these may be scarce or sometimes wholly lacking. The thick leaves are alternate, 1 to 4 inches long (including the stalks), 1/4 to 1 inch broad, and are darker above than underneath. They are lance-shaped to narrowly oblong, the margins smooth to deeply wavy.

The showy flowers are deep violet or blue, 3/4 to 1 inch across, wheel-shaped and lobed. They are stalked, and in a few flowered clusters at the ends of the stems, or on short branches. The berrylike pods, 1/3 to 1/2 inch in diameter, are mottled green, dull yellow, or orange yellow when mature. They are hairless and smooth, pulpy, somewhat berrylike, and contain numerous seeds.

The nearly disk-shaped seeds are about 1/8 inch long, yellowish brown, and the surface is shiny and finely granular.

**Distribution** - Silverleaf nightshade is a native plant, growing preferably on moist sandy soil. Is especially troublesome in the irrigated valleys, where it is a pest in all types of crops, especially cotton, sorghum, and alfalfa. Abundant on ditchbanks, row ends, along roadsides, waste places, sandy washes, and bottom lands; 100 to 5,500 elevation; flowering April to October. It is reported that the Pima Indians use the crushed berries in making cheese.

**Poisonous Properties** - As little as 0.1% of the animal's weight of silverleaf nightshade has been found toxic to cattle. The ripe seedpods are slightly more toxic than the green ones, and the leaves were least poisonous. The leaves and seedpods of silver leaf nightshade contain the poisonous alkaloid solanine.



Silverleaf nightshade (*Solanum elaeagnifolium*). Spiny plant with flowers and seedpods: a Mottled seedpod, b Seed



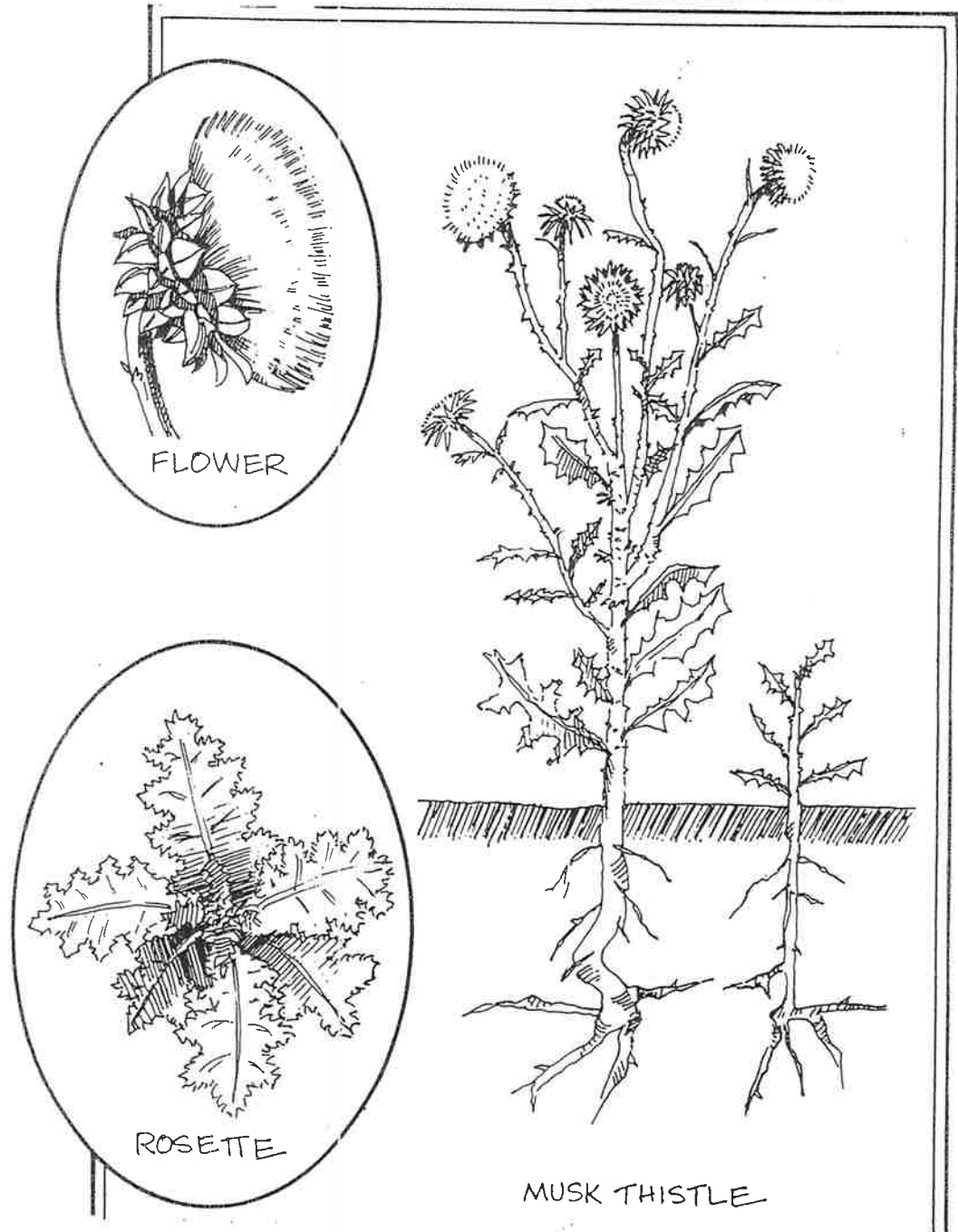
**Musk Thistle**

Sunflower Family - Asteraceae

**Musk Thistle - *Carduus nutans* L.**

**Description** - Musk thistle is a biennial or sometimes a winter annual, which grows up to 6 feet tall. Leaves are dark green with light green midrib, deeply lobed, and spiny margined. Leaves extend onto the stem giving a winged appearance. Flowers are terminal, solitary, 1 1/2 to 3 inches in diameter, and usually bent over. Flowers are deep rose, violet or purple, occasionally white; they are subtended by broad, spine-tipped bracts. Fruits are 3/16 inch long, shiny, yellowish-brown with a plume of white hair-like fibers.

**Distribution** - Musk thistle was introduced to the U.S. in the early part of the century and is now widespread throughout the U.S. and Canada. It is native to southern Europe and western Asia. It invades pasture, range and forest lands along with roadsides, waste areas, ditch banks and grain fields. Its aggressive nature allows it to spread rapidly forming extremely dense stands which crowd out desirable forages.





**Blueweed, Texas blueweed**  
Sunflower Family - Compositae

**Blueweed - *Helianthus ciliaris* DC.**

**Description** - Blueweed is a low bluish or grayish green perennial, 1 to 2 feet high; reproducing by seed, but principally by the widespread underground system of upright roots and rhizomes. The leaves, which give the plant its characteristic color, are stemless, and may be alternate or opposite. They are narrow to broadly lance-shaped, 1 to 4 inches long, and vary greatly in width, from 1/2 to 3/4 inch. The margins are often very wavy, and bear short stiff hairs. Similar hairs may also occur along the veins on the lower surface; otherwise, the plant is hairless. The flower heads 1/2 to 1 inch broad, have yellow ray or marginal flowers. The central flowers are dark purplish brown. The achenes are grayish brown, 4-angled, somewhat wedgeshaped, and about 1/8 inch long, often with dark brown spots at maturity.

**Distribution** - It grows in dense colonies in heavy alkaline or saline soil, in sandy loam ditchbanks, in low drainage areas, dry lakes, and roadsides from whence it spreads to cultivated lands. It is found from 100 to 7,000 feet elevation, and flowers from May to October. Blueweed is a potential pest in any cultivated field it invades. Cultivation may aid its spread. The rhizomes are cut into pieces and distributed throughout the soil. These pieces are capable of starting new plants. Its growth is so persistent that many crops cannot compete favorably, and eventually may be crowded out.



Blueweed (*Helianthus ciliaris*).  
Top of plant showing leaves and flower  
heads. a. Achene mottled dark brown.