

# PASTURE WEEDS OF SOUTH FLORIDA

**3RD EDITION**

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# Introduction

Weeds in pastures and rangeland cost ranchers in excess of \$180 million annually in Florida by reducing forage yield, lowering forage quality, and causing animal injury through toxicity or specialized plant organs (thorns and spines). Effective weed management begins with a healthy pasture. Weeds are seldom a serious problem in a well-managed, vigorously growing pasture. Good pasture management involves the proper choice of the forage species and variety, an adequate fertility program, controlled grazing management, and pest management (weeds, insects, and diseases). If pasture health declines, weeds will exploit the situation and become established. Bare ground is the perfect environment for establishment of weeds. Once established, weeds must be controlled with mechanical or chemical methods. However, unless the pasture-management problem that caused forage decline is corrected, the grass will not re-establish and weeds will re-infest the area. Integrated weed management is both an economically and environmentally sound approach to weed management. An integrated approach involves scouting, prevention, and control (biological, cultural, mechanical, and chemical) in a coordinated plan.

## Scouting

Scouting pastures is the foundation of a sound weed management program but is often overlooked. Scouting involves routinely walking or driving through pastures and identifying weeds. This defines the scope of the problem and allows the best management practices to be implemented in a timely fashion. The number of weeds, the species present, and their locations are important. Note the dominant species as well as uncommon or perennial weeds. The management strategies adopted should focus on controlling the dominant species, while preventing the spread of less common species. If not managed proactively, the less common weeds in a pasture may become future dominant weed problems. Proper identification of weeds is the first step toward weed control. A good example is knowing the difference between tropical soda apple (TSA) and red soda apple (cockroach berry). Of the two, only TSA is a troublesome invasive weed that must be controlled. However, some have occasionally confused the two species and allowed TSA to go uncontrolled. Unfortunately, this costly mistake results in TSA spreading throughout the ranch and potentially onto neighboring ranches. If there are questions concerning weed identification, contact your local UF/IFAS Extension office for assistance. Some weeds grow best in wet sites (maidencane ponds, depressional areas, ditches, etc.), while others can be found on dry sites (ditch banks, upland areas, and fence rows). Scout pastures for weeds in conjunction with other activities, such as checking calves, working cattle, and feeding. When a weed is first discovered, remove it or spot treat with an appropriate herbicide. Do not allow that one plant to produce seed and give rise to hundreds of new plants. It is less expensive (in terms of both time and money) to control one plant than to wait and have to control hundreds of plants. Poisonous plants (e.g., *Crotalaria*, black nightshade, spiny pigweed, lantana, etc.) are commonly found throughout Florida. Animals do not usually choose to graze most poisonous plants when forage is abundant; however, when quality forage is limited because of poor growing conditions or overstocking, they may graze these plants.

## Prevention

Prevention is any activity that keeps weeds from infesting a pasture. Most weeds spread by seed. Thus, preventing the movement of weed seeds onto the ranch reduces potential weed pressure. Weed seeds can be transported in hay, harvested grass seed, sod, cattle, mowing equipment, or dispersed by wind, water, and wildlife. Producers should avoid buying hay or grass seed that is contaminated with weed seeds. Refuse to purchase hay from someone who cannot provide a weed-free product. Using certified forage seed reduces weed seed contamination and is highly recommended. Also, consider TSA. Cattle have been shown to excrete TSA seeds for at least 7 days after consumption. If cattle are grazing in a TSA-infested pasture, it is recommended that the cattle are held in a clean area for 10 days before moving them to a new pasture. This will reduce the likelihood of transporting TSA seeds. Remember, an ounce of prevention is worth a pound of cure.

## Control

### *Cultural Control*

Cultural practices improve weed control by increasing the competitiveness of the forage. This involves optimizing forage production through monitoring soil pH, fertility, and, potentially, water management. Generally speaking, a thick sward will prevent weed emergence, will outcompete emerged weeds, and will capture the majority of environmental resources (light, water, nutrients) necessary for growth. The aim of cultural practices is to modify your management program so that

the sward is as competitive as possible. Soil pH is an important factor for forage growth as well as weed establishment. Forage agronomists and soil scientists at the University of Florida have determined the optimum soil pH for most forages grown in Florida. Acidic soils limit plant growth and can result in aluminum and manganese toxicity and magnesium, calcium, phosphorous, molybdenum, and potassium deficiency. Soil acidity may also result in poor root growth, which can reduce water and nutrient uptake. Weeds that grow under such conditions can be indicators of low soil pH. For example, crowfoot grass germination is optimum at soil pH levels between 4 and 5, which is too low for optimum forage growth. Thus, the presence of crowfoot grass in your pasture may warrant a soil test and corrective action.

### ***Mechanical Control***

Mowing is one of the most often used weed control methods in pastures. Mowing improves the appearance of a pasture, temporarily increases forage production, and, if properly timed, prevents weeds from producing seed. Mowing is generally more effective on broadleaf weeds than grass weeds and is more effective on annual weeds than perennial weeds. Carefully consider the cost of mowing and the anticipated effectiveness. As fuel prices increase, it may be more cost-effective to avoid mowing and use other forms of weed control since other weed control methods may be more effective on a given species. Mechanical weed control does have drawbacks. Large weeds with extensive root systems will not be controlled through mowing alone. Additionally, mowing misses prostrate-growing weeds like crabgrass, spurge, and matchweed. Mowing can also spread vegetative plant stems, allowing the plant (e.g., prickly pear) to root elsewhere. If mowing is performed after seed set, seeds can accumulate on the mowing equipment and worsen the weed problem by spreading seed to other pastures.

### ***Biological Control***

Biological control involves the use of biotic agents (e.g., plants, herbivores, insects, nematodes, and phytopathogens) to suppress weeds. Overall, biological control is still in its infancy, but great strides are being made, especially against invasive plants. Two good examples are the tobacco mild green mosaic tobamovirus (TMGMV) and the newly released insect, *Gratianaboliviana*, both used for TSA control. The virus TMGMV can be sprayed to control existing TSA plants, while the beetle is used primarily for suppression. Most biological control agents rarely provide complete weed control, but they usually suppress the weed population to a manageable level. Additionally, biological control agents are rarely fast-acting, so time is needed for the agent to suppress a given weed population. For example, the effect of *Gratianaboliviana* is not often seen until the year following the release of the beetle.

### ***Chemical Control***

Chemical weed control includes the use of herbicides. Herbicides kill weeds by inhibiting plant processes necessary for growth. Herbicides should be selected based on forage species being grown, weed species present, cost, and ease of application. Application method and environmental impact should also be considered. Proper herbicide choice and application rate are extremely important. Lower-than-recommended application rates will not provide consistent weed control, while excessive application rates may cause injury to the forage or result in only killing the above ground portion of perennial weeds. Also, herbicides must be applied at the correct time to be cost-effective. Preemergence applications are made before weeds germinate and emerge. Understanding the life cycle of the weed is important when using a preemergence herbicide. Some weed seeds germinate in the summer, while others germinate in the winter months. Always refer to the herbicide label for additional information about controlling specific weeds. Postemergence applications are made after the weeds emerge. The most effective and cost-efficient applications are made when the weeds have recently emerged and are small. For perennial weeds (regrowing from root storage organs), it is advisable to allow them to bloom before spraying, which allows sufficient leaf surface for coverage and ensures that the perennial is transporting photosynthates back to the roots. Postemergence herbicides may be broadcast over the entire pasture or may be applied as a spot treatment to sparse weed patches. Spot treatment is less costly compared to broadcast spraying. Other application methods include wipers and mowers that dispense herbicide while mowing the weed. In all cases, it is extremely important to carefully read the herbicide label before purchase to determine if that herbicide controls the weeds in your situation.

Asparagus Fern  
*Asparagus sefaceus*



Asparagus fern is an herbaceous perennial from a crown of tuberous roots to 2' in height, with stems stiff or spreading-arching to 6' long. Larger branches usually bearing minute axillary spines. Branchlets flat, needle-like, bright green, to 1" long, clustered at branch nodes. Leaves are tiny, scale-like, at bases of branchlets. Flowers are small white or pinkish white and fragrant. Fruit is bright red berry about <1" in diameter, with 3 seeds per fruit. It prefers shady, slightly wet areas. Birds are highly attracted to the fruit and aid in the dispersal of asparagus fern.

Control

Glyphosate at 1% solution with 0.25% surfactant has shown good control. Retreatment will probably be necessary to provide complete eradication. Other products may show activity, but limited testing has occurred.

Bagpod  
*Sesbania vesicaria*

Photo Credit:  
UF/IFAS Weed  
Identification



Bagpod is an herbaceous plant with thick, smooth stems. Leaves are arranged in an alternate pattern, even-pinnately compound with many, paired, elliptic or oblong leaflets. Stems have few white hairs. Plants can be up to 13' tall. Flowers can be yellow, but also vary in color. Seedpods are flattened and usually contains up to 2 seeds. It characteristically forms large, dense populations in low areas subject to flooding and along roadsides and sandy stream banks. The seed contains sesbanimide and is toxic. There is some indication that newly mature seeds are more toxic than those that have weathered on the plant.

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Banvel	GrazonNext HL	Metsulfuron
F – G	E	E	G	E	E

E = 90%–100% control; G = 80%–90% control; F = 60%–80% control; P = less than 60% control; - = insufficient

Beautyberry  
*Callicarpa americana*

Photo Credit:  
Dr. Brent Sellers



American beautyberry is a native woody perennial shrub; growing 5 – 8' tall and almost as wide with drooping branches. The elliptical to ovate shaped leaves (2 - 6" long and 1 - 4" wide) have an opposite arrangement with saw toothed margins. The underside of the leaves may be covered with wooly like hairs. The stems are slender, gray to reddish brown, and terete or four sided. Fruit is shiny purple druping clusters. Beautyberry grows in partly shady to partly sunny areas.

Control

Very difficult to control. Remedy (tricopyr) kills top growth, but regrowth from the base is common.

Black Nightshade  
*Solanum americanum*

Photo Credit:  
Dr. Brent Sellers



Black nightshade is an annual that can grow approximately 2' tall. It is an herbaceous plant with green stems, leaves are ovate or lanceolate in shape with waves on the edges and grow in an alternate position on the stem. Flowers are white with a yellow center in a bell shape. Fruit are green when immature, turning purplish black when mature. Immature berries and foliage are toxic to livestock. It is seen in a variety of habitats, typically disturbed soil.

Toxicity Symptoms

Weakness, stupor, staggering gait, extreme nervousness, staring eyes, dilated pupils and paralysis are symptoms of nightshade poisoning in cattle, sheep, and hogs. The progress of the symptoms usually is rapid and poisoned animals often are found dead.

Control

Chaparral	Banvel	Vista XRT	GrazonNext HL	Milestone	PastureGard HL	Remedy	Velpar	WeedMaster
E	F - G	F	E	E	G	G - E	F - G	F - G

E = 90%–100% control; G = 80%–90% control; F = 60%–80% control; P = less than 60% control; - = insufficient observations

Black Root  
*Pterocaulon pycnostachyum*

Photo Credit:  
Dr. Brent Sellers



Black Root is an herbaceous perennial plant with lance-shaped leaves, 6" long but less than a 0.5" across. Leaf tops are dark green with a prominent white vein running down the middle. The undersides of the leaves are hairy and gray-green in appearance. The leaf base doesn't end where it meets the stem like most plants, but rather runs down the stem, creating a striped look. The plant can grow up to 2' tall. The flower is about 4" long and is made up of numerous dull, white flowers. Black Root grows in dry to moist areas.

Control: 2,4-D, dicamba + 2,4-D, GrazonNext HL, PastureGard HL

Blackberry  
*Rubus cuneifolius*



Blackberry is an erect, perennial shrub that can reach 3 - 6' tall but is commonly shorter. Stems are armed with sharp, stiff, curved thorns. The leaves are arranged in an alternating pattern. The flowers are white with five petals, born in loose clusters near the ends of branches. The fruit is an aggregation of berries, dark purple in color when mature. It is found in sandy woods, dry pastures, and dense woods.

Control

Chaparral	Cimarron Plus or Xtra	Banvel	Vista XRT	GrazonNext HL	Metsulfuron	PastureGard HL	Remedy	Velpar	WeedMaster
G - E	G - E	F - G	F	P - F	G - E	G - E	G - E	F	P - F

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Bracken Fern  
*Pteridium aquilinum*

Photo Credit:  
Dr. Brent Sellers



Bracken fern is an herbaceous perennial plant, producing reproductive spores on the underside of the leaves. It has stiff upright branching fronds that can reach 23" with leaflet like sections growing 1/2" to 3" long. The plant can grow to be 4 1/2' tall. This plant grows well in both wet and dry soil but seems to prefer semi-shaded environments with good drainage. Bracken fern is considered toxic for livestock when eaten in large amounts.

Toxicity Symptoms

Cattle affected with bracken fern poisoning usually have a high temperature, stand with a head down and drool. Bloody fluid trickles from the nostrils. Blood appears in the feces, either as black masses or bright red clots. The pulse becomes fast and weak, while respiration often is labored. Death often occurs within 48 hours after the onset of symptoms.

Control

Chaparral	Cimarron Plus or Xtra	Banvel	Metsulfuron	PastureGard HL	Remedy	Velpar
E	E	P - F	E	P - F	P - F	F

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Brazilian Peppertree  
*Schinus terebinthifolia*

Photo Credit:  
Dr. Carey Minteer



Brazilian Pepper is a perennial invasive woody shrub or small tree that can grow up to 30' tall. The compound leaves have a reddish midrib, are elliptic or oblong and are arranged in an alternate pattern. The mature fruit is a bright attractive red berry, the flower is a small cluster of petals. Brazilian peppertree will colonize near water, dense forests or open pastures. For more information see EDIS document #SS-AGR-17.

Control

Milestone	Outrider	PastureGard HL	Remedy	Velpar	WeedMaster
P	P	P - F	G - E	G - E	P

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Broomsedge  
*Andropogon spp.*

Photo Credit:  
Dr. Brent Sellers



Broomsedge bluestem is a native warm season perennial bunchgrass that grows 2 - 4' tall. The leaves are flat to partly folded 10 - 15" long and approximately 1/8" wide. The flattened basal leaf sheaths are colorless or yellow. The rest of the plant is a pale greenish yellow. Broomsedge bluestem produces many seeds on the upper half of the plant. At a distance the inflorescence may appear silvery in the sunlight. The grass is found in open areas such as abandoned fields, overgrazed pastures, cutover timber sites, and rights of way. Broomsedge grows on a wide variety of soils, preferring loose, sandy, moist sites with low fertility and is an indicator of low phosphorus soils. Note: This is one of the many broomsedge species found throughout the state. Liming soil does not necessarily eradicate broomsedge species; a soil test is very important to determine if lime is necessary for a particular pasture.

Control

Spot-treat with glyphosate 1% v/v or weed wiper with glyphosate 10% v/v

Bushmint  
*Hyptis verticillata*

Photo Credit:  
Dr. Brent Sellers



Bushmint is a short-lived perennial, herbaceous plant. Stems are smooth to sparsely haired, but new growth of stems and branches tend to be square. Plant grows to 6' tall and typically found in shaded areas, however it is capable of growing in full sun, but prefers moist soil. Leaves are opposite, stalked, toothed and tapered at the base. Flowers are white and form in clusters on axillary terminal spikes.

Control

Milestone	PastureGard HL	Remedy	WeedMaster
P	G	G	P

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Photo Credit:  
Dr. Brent Sellers

Butterweed  
*Packera glabella (Senecio glabellus)*



Butterweed is a winter annual herbaceous weed. Leaves of this plant tend to be deeply lobed, except at the seedling stage, when the leaves are nearly entire (without lobes). As the flowering stalk elongates, the stems become ribbed with red or purple streaks. The leaf arrangement becomes alternate on the succulent and hollow stems. Butterweed produces several bright yellow flowers on its stems that have both inner and outer flowers. Seeds contain a white feathery pappus, or tuft of hair, that aids in wind dispersal and spread of the plant. It tends to prefer moist soils, so its presence in low-lying areas in pastures is quite common.

Control

Milestone	PastureGard HL	WeedMaster
G – E	G – E	F – G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Buttonbush  
*Cephalanthus occidentalis*

Photo Credit:  
Dr. Brent Sellers



Buttonbush is a deciduous shrub or small tree, potentially to about 49' tall but usually much shorter and not exceeding about 9'. Most specimens of buttonbush are small, reaching no more than about 4 to 6' tall. It has opposite or whorled leaf arrangement with a slightly red stem color. White flowers are in a 1-1 1/2" diameter globe. Bright red fruits form by late summer. It is most easily recognized by its simple, elliptic, sometimes whorled leaves and showy rounded flower heads. It is seen in wet areas and sites with standing water.

Control

Remedy is effective.

Caesar Weed  
*Urena lobate*

Photo Credit:  
Dr. Brent Sellers



Caesar weed is an annual erect herbaceous shrub that can be perennial in some areas in the southern part of the state. It can grow up to 10' in height. The leaves are palmately lobed, pubescent with stellate hairs, and 1-½ to 3" long. Flowers are borne in axillary clusters, pinkish-violet, they are 0.6" long. Fruit is pubescent with hooked bristles or barbs that cling to clothing or fur. Caesar weed prefers dry soil.

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Vista XRT	GrazonNext HL	Metsulfuron	Milestone	PastureGard HL	Remedy	WeedMaster
G - E	G	G	G - E	G - E	G	G - E	E	E	G - E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Castor Bean  
*Ricinus communis*

Photo Credit:  
UF EDIS  
Publication



This small-statured annual tree with leaves that are simple and alternate and can grow very large; from 15 - 30" wide. The green to reddish leaves are lopsidedly peltate, with the petiole attaching to the interior of the blade above the center point. Each leaf has 5 to 11 major veins radiating outward into narrow lobes with jagged margins. Flowers appear in summer and fall on tall spikes up to 18" long that grow out of the top of the stems. The fruit is a ½ to 1" diameter, spiny capsule that turns from yellow to blue-green and then to brown as it matures. It is non-native to Florida and considered a Category II invasive species by the Florida Exotic Pest Plant Council because it is abundant throughout Florida but has not yet displaced native plant communities. Each capsule house three small, poisonous seeds that resemble dog ticks. Castor bean can grow up to 40' tall and grows best in full sun and in disturbed land areas.

Toxicity Symptoms

The symptoms of poisoning in horses, cattle, and sheep are similar; nausea, violent purgation (sometimes bloody), and general toxic symptoms are seen. In case of prolonged illness, muscular tremors, general weakness, and emaciation occur.

Control

2,4-D	GrazonNext HL
F - G	F - G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Chickweed  
*Stellaria media*

Photo Credit:  
Dr. Brent Sellers



Common chickweed is a low-spreading winter annual or perennial weed. Stems have vertical lines of hairs with small white flowers are borne in clusters at the end of the stems. Flowers have five deeply notched petals and, though small, are quite noticeable. Chickweed leaves are egg shaped with a pointy tip covered with soft hairs, and are dark green or gray-green, and arranged opposite on the stem. The fruit is an egg-shaped capsule 0.16–0.26" long and breaks into six segments at maturity. Chickweed grows in cultivated fields, gardens, lawns and roadsides.

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Banvel	GrazonNext HL	Metsulfuron	PastureGard HL	Remedy	Velpar	WeedMaster
F	E	E	E	F	E	F	E	E	E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Chinaberry  
*Melia azedarach*

Photo Credit:  
UF/IFAS



Chinaberry is a deciduous, shade tree that is native to Asia and has been planted around the world as an ornamental. It can reach 40' at maturity. The leaf arrangement is alternate 1 to 2-1/2" long. Its flower is lavender and grows in clusters 8" long. Chinaberry fruit is fleshy drupes 1/3 -3/4". It is successfully grown in a wide variety of situations, including alkaline soil where other trees might fail.

Toxicity

May affect primarily the digestive system or there may also be a neurologic effect.

Control

Coffee Senna  
*Senna obtusifolia*



Photo Credit:  
Dr. Brent Sellers

Coffee Senna is an erect, summer annual plant that has alternate, compound leaves along the stem with opposite leaflets. A spherical gland is present on the base of the petiole. Problems arise due to the toxins that this weed, as well as sicklepod, exudes. This toxin is known to cause digestive tract irritation and cardiac muscle degradation. Coffee senna prefers well-drained soils and often becomes a serious pest of cultivated crops.

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Banvel	Vista XRT	GrazonNext HL	Metsulfuron	PastureGard HL	Remedy	WeedMaster
G	E	E	E	E	E	E	E	E	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Cogongrass  
*Imperta cylindrica*



Photo Credit:  
Dr. Brent Sellers

Cogongrass is a perennial invasive grass. Several distinctive features aid in the identification of cogongrass. Individual leaf blades are flat and serrated, with an off-center prominent white midrib. The leaves reach 2 - 6' in height. The seed head is fluffy, white, and plume-like. Flowering typically occurs in spring or after disturbance of the sward (mowing, etc.). Seed heads range from 2 - 8" in length and can contain up to 3,000 seeds. Each seed contains silky-white hairs that aid in wind dispersal. Cogon grass prefers well-drained soil areas.

Control

Control and eradication of Cogongrass requires a multi-year protocol approach. For products and control protocols, see EDIS publication [SS-AGR-52](#), Cogongrass Biology, Ecology, and Management in Florida Grazing Lands.

Common Purslane  
*Portulaca oleracea*

Photo Credit:  
MSU Turf



Common purslane is an annual succulent in the Portulacaceae family. It has smooth, reddish, mostly prostrate, stems and alternate fleshy oval leaves. Leaves tend to be clustered at joints and stem ends. Flowers are small (1/4"), yellow, and have five heart-shaped petals that can appear any time of year. They can be found in the cluster of leaves at the stem end and they open only briefly in the morning hours. Purslane prefers well-drained soil.

Control

Paraquat	2,4-D
G	G

Weed control symbols: E = 90%–100% control; G = 80%–90% control; F = 60%–80% control; P = less than 60% control; - = insufficient observations.

Common Ragweed  
*Ambrosia artemisiifolia*

Photo Credit:  
Dr. Brent Sellers



Common Ragweed is an herbaceous, summer annual. It can grow up to 3' tall that branches frequently. The hairy stems are green to light pinkish red. The leaves are up to 6" long and 4" across and are opposite or alternate along the stems. They are deeply pinnatifid, broadly lanceolate, and usually much wider at the base than the tip. Mature leaves are relatively hairless, but small emergent leaves often have hairs on their undersides. Many of the upper stems terminate in one or more cylindrical spikes of flowers about 1 - 4" long. The small flowers are initially green, but later turn yellowish green or brown as they mature and develop into achenes. Each flower is about 1/8" long. Ragweed prefers disturbed soil.

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Banvel	GrazonNext HL	Metsulfuron	Milestone	PastureGard HL	Remedy	Velpar	Vista XRT	WeedMaster
E	E	G	E	E	G	E	E	E	F	G	E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Coral Ardisia  
*Ardisia crenata*



**TOXIC**

Photo Credit:  
Dr. Brent Sellers

Coral ardisia is an evergreen sub-shrub reaching heights of 1.5 - 6'. It tends to grow in multi-stemmed clumps. Leaves are alternate, 8" long, dark green above, waxy, without hairs, scalloped margins and calluses in the margin notches. Flowers are typically pink to white in stalked axillary clusters, usually drooping below the foliage. The fruit is a bright red, globose, 1-seeded berry, measuring approximately 0.25" in diameter. White-berried populations also exist. It is found in various disturbed habitats, usually uplands. Although there is no published literature supporting the theory that coral ardisia is toxic, it is suspected that the berries and/or foliage are poisonous to livestock, pets, and humans.

Control

Impose/Panoramic	PastureGard HL	Remedy
G	F - G	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Coral Bean  
*Erythrina herbacea*



Photo Credit:  
Nick Russakis

Coral Bean is a perennial, thorny stemmed shrub growing up to 6'. The long-petiole, leaflets are distinctively arrowhead-shaped. Leaves are alternate, scattered along the stem, 3 leaflets forming the leaf. The leaves are 3 - 5" long and 3 ½ - 4" wide. The scarlet-red flowers are 12" long in spike-like clusters on the upper portion of the stem, and flowers typically appear before the leaves. There are 5 united sepals and 5 petals 1 ½ - 2" long, with the upper petal wrapped around the other 4. These are followed by a persistent legume pod containing several bright red beans. The pod is blackish, constricted between the seeds, and up to 8 ½" long. The seeds are firmly attached to the pod by a sturdy 1/8" long thread and will remain in place for months. It prefers dry sites to moist woods.

Control

Spot-treatment: Remedy at 0.5 – 1.0% v/v solution.

Crabgrass  
*Digitaria spp.*



Photo Credit:  
Telenko

Crabgrass species are tufted to prostrate summer annuals with branched stems that root at the lower nodes. It forms clumps or are loosely running and has large leaves (more than 2" long) that are usually hairy on both sides; the leaves can be hairy or hairless, depending on the species. The ligule is membranous. Crabgrass is found growing in dry to moist pastures, fields, roadsides and lawns.

Control

Impose/Panoramic	Pastora	Glyphosate
E	F - G	E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Creeping Indigo  
*Indigofera spicata*



Photo Credit:  
Dr. Brent Sellers

Creeping indigo is a perennial prostrate plant with a very shallow or submerged crown. Leaves are alternate compound and contain to 5 to 7 alternate leaflets. Yellowish brown or yellowish green stems grow to 6' long and root at the nodes. Flowers arise from the base of the leaves and contain numerous pink blooms. The plant reproduces by seed, which is the main cause of spread. Seed pods are needlelike, stiff, approximately 1" long, and borne in dense, downward-pointing clusters. They contain 4 to 8 seeds. Leaflets, stems, and seed pods contain numerous appressed hairs. The perennial root is a taproot, which is capable of growing at least 2' deep. Unlike hairy indigo, creeping indigo is nearly hairless.

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Banvel	GrazonNext HL	Metsulfuron	Milestone	PastureGard HL	Remedy	WeedMaster
G	E	E	G	E	E	E	G	G	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Crotolaria, showy  
*Crotolaria spectabilis*



Commonly known as Showy Rattlebox, Showy Crotolaria is a fast-growing summer annual that germinates in early spring and flowers in late summer and is capable of growing to 6'. Stems are typically branched with fine hairs. It has simple leaves that are large and waxy and tend to be wider toward the tip of the leaf, with persistent rounded flaps beneath each leaf attachment. Yellow flowers that resemble those of a pea on an upright stalk, and the fruit is a cylindrical pod that contains many seeds that rattle at maturity. Showy Crotolaria is toxic to livestock, containing high levels of alkaloids, which commonly cause issues in cattle and horses in the southeastern states.

Toxicity Symptoms

Acute poisoning in cattle is marked by depression, loss of appetite, bloody feces, drooling saliva, nasal discharge, and yellowish discoloration of the visible mucous membranes. Death occurs within 5-10 days. The most common type of poisoning observed in cattle under field conditions is the chronic form in which animals often die 2-6 months after eating the plant. Very little evidence of illness is observed until 7-14 days before death. The hair coat may appear rough and there may be a slight un-thriftiness. Usually the first symptom noted is bloody feces. The eyes have an anxious or staring appearance. The animal appears slightly bloated and full in the middle. Loss of appetite, diarrhea, yellowish discoloration of the visible mucous membranes, partial eversion of the rectum and general weakness are other symptoms. The animal "goes down" before death, due to general weakness.

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Banvel	Vista XRT	GrazonNext HL	Metsulfuron	PastureGard HL	Remedy	WeedMaster
G	E	E	E	E	E	E	E	E	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Cutleaf Groundcherry  
*Physalis angulata* L.



Photo Credit:  
Dr. Brent Sellers

Cutleaf Groundcherry is an erect branching annual herb growing to 3.2' in height. It is usually hairless; however, occasional plants have short appressed hairs, especially on younger parts. The leaves are alternate widely ovate to lanceolate in shape, 1.5 - 4" long and 1.1 - 2.3" wide. The petioles are up to 1.5" long or longer. The leaf margin is usually irregularly toothed or deeply lobed, but may be smooth. The fruit is a yellow berry enclosed in enlarged rounded 10-ribbed calyx. It prefers open woodlands roadsides, pastures.

Control

Chaparral	Banvel	Vista XRT	GrazonNext HL	Milestone	Pastureguard HL	Remedy	Velpar	WeedMaster
E	F - G	F	E	E	G	G - E	F - G	F - G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Dayflower  
*Commelina diffusa*



Photo Credit:  
IRRI Images

An herbaceous annual plant with diffuse branched stems reaching up to 3' long. Leaves are lanceolate 1 - 3" long, 0.1 - 0.7" wide, with the base sheathing the stem. Flowers are usually solitary sheath tapering to a point with 3 blue petals and are boat-shaped. Dayflower prefers wet soils near marshes or streams.

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Banvel	GrazonNext HL	Metsulfuron	PastureGard HL	Remedy	WeedMaster
G	F	F	F	F - G	F	G	G	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Dewberry  
*Rubus trivialis*



Photo Credit:  
Dr. Brent Sellers

Dewberry is a perennial, low, vine-like growth habit and rarely reaches heights greater than 2'. Dewberry commonly has slender thorns with red hairs on the stem, while blackberry has hard, tough thorns and no hairs. Leaves are usually 0.3 - 1.1" wide oblong to lanceolate-ovate, acute, serrate, or doubly serrate. Flowers are solitary with obovate, white, rarely pink. Fruit are aggregate of drupes 0.3 - 0.5" long. Additionally, the seeds in dewberry fruit are much larger and tougher than those in blackberry. Dewberry prefers dormant pastures and waste sites. For further information and control protocols, see EDIS publication [SS-AGR-240](#).

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Banvel	GrazonNext HL	Metsulfuron	PastureGard HL	Remedy	WeedMaster
P	F - G	F - G	P	P	F - G	F - G	F - G	P

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Dogfennel  
*Eupatprium capillifolium*

Photo Credit:  
Dr. Brent Sellers  
& Jay Ferrell



Dogfennel is an aggressive native perennial found throughout much of the Southeast. The growth will generally consist of a single, non-branching shoot that can exceed 8' in height. The leaves are alternate 1.1 - 3.9" long and emit a strong odor when crushed. Seeds are surrounded with hairs (similar to dandelion), allowing effective dispersal by wind. Dogfennel is found in fields, pastures and roadsides. For more information and control protocols, see EDIS publication [SS-AGR-224](#).

Control

2,4-D	Cimarron Plus or Xtra	Banvel	Vista XRT	GrazonNext HL	Metsulfuron	PastureGard HL	Remedy	Velpar	WeedMaster
F - G	F	F - G	G	F - G	F	E	G - E	G	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Dollarweed or Pennywort  
*Hydrocotyle spp.*

Photo Credit:  
Dr. Brent Sellers



Dollarweed, or pennywort, is a perennial weed prevalent in Florida. Pennywort reproduces via seeds, rhizomes, and occasionally by tubers. It produces erect, bright green, shiny leaves with scalloped margins. The petiole is located in the center of the leaf and forms an umbrella shape, which renders this weed easily distinguishable from dicandra, where the petiole is found at the margin of the leaf base. Pennywort flowers are white and occur in elongated spikes or rounded umbels at the top of long stalks. The plant produces greenish, rounded, and somewhat flattened fruit. Pennywort is found in moist to wet sites.

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Banvel	Vista XRT	GrazonNext HL	Metsulfuron
G	G	G	E	F	G	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Elderberry  
*Sambucus nigra ssp. canadensis*:

Photo Credit:  
Ed Gilman,  
UF/IFAS



A fast-growing deciduous shrub capable of reaching heights greater than 12' on brittle, woody stems, elderberry is often seen as a broad, spreading, multi-stemmed plant with bright green, pinnately compound, 6 - 10" long leaves arranged along the arching branches. Leaf arrangement is opposite, stalked and blades contain 3 to 11 narrow elliptical leaflets with toothed margins. In early summer (northern part of its range) or sporadically all year long, elderberry is literally smothered with 6 - 10" wide clusters of yellowish-white blooms. Elderberry is commonly seen in moist sites of fields, ditches, and woods of eastern North America. The green foliage and berries are considered toxic, while the ripe berries are considered non-toxic.

Control

2,4-D	Banvel	GrazonNext HL	PastureGard HL	Remedy
F - G	F - G	F - G	G	E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Cutleaf Evening Primrose  
*Oenothera laciniata*

Photo Credit:  
Dr. Brent Sellers



Primrose is a winter annual herbaceous weed. The leaves are alternate 1.1 - 3.1" long and 1.9 - 7.8" wide, elliptic to lance-shaped with irregularly notched or lobed margins. Plants initially grow as a rosette. Stems are low-growing, often prostrate, branching near the base and hairy. Flowers are yellow tubular flowers which fade to red-pink in leaf axils. Primrose prefers cultivated areas, fields, pastures, roadsides and gardens.

Control

Milestone	PastureGard HL	Remedy	Velpar	WeedMaster	2,4-D	Chaparral	GrazonNext HL
E	G	E	E	E	E	G	E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Fireweed/Stinging Nettle  
*Urtica chamaedryoides*



Photo Credit:  
Dr. Brent Sellers

Fireweed is an annual or perennial herbaceous weed. Leaves are opposite, long or short petiolate, blades are lanceolate to ovate or cordate with stinging hairs. Stems are erect 19-30" tall branched or unbranched; can be as tall as 3'. Hairs contain irritants that have been shown to cause respiratory stress and local allergic reactions when ingested or inhaled. Fireweed prefers moist open woods, stream banks and waste areas (typically found in shaded areas). For further information and control protocols, see EDIS publication [SS-AGR-41](#).

Control

2,4-D	Chaparral	Vista XRT	GrazonNext HL	Impose/ Panoramic	Milestone	Outrider	PastureGard HL	Remedy	WeedMaster
P	E	G - E	E	P	E	P	E	E	E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Flattop Goldenrod  
*Euthamia caroliniana*



Photo Credit:  
Dr. Brent Sellers

Flat-top goldenrod is a perennial plant that grows to approximately 3' in height. Leaves are alternate, extremely narrow, and similar in width and length to the leaves of dogfennel. Leaves are often shed during flowering, except near the top of the plant. Flat-top goldenrod appears as a single stem when it emerges in the spring, but the stem begins to branch as early as mid- to late May. The branches grow to produce a flat-topped appearance. Flowering occurs from September through November, and the flat-topped inflorescence consists of many yellow ray and disk flowers. For further information and control protocols, see EDIS publication [SS-AGR-353](#).

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Banvel	GrazonNext HL	Metsulfuron	Milestone	PastureGard HL	Remedy	WeedMaster
G	P	P	F - G	G	P	P	P	P	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Florida Pusley  
*Richardia scabra* L.

Photo Credit:  
Brandon Fast



Florida pusley is a common and troublesome annual herbaceous weed. Plants grow prostrate (creeping along the ground) and have hairy stems that grow to lengths of up to 30". Leaves are thick and fleshy up to 3" long and often have a rough upper and lower surface. Small white flowers that form a cluster at the ends of stems are characteristic of this weed. It is found in pastures, cultivated fields, waste areas, yards, and roadsides throughout Florida. For further information and control protocols, see EDIS publication [SS-AGR-314](#).

Control

2,4-D	Banvel	Vista XRT	GrazonNext HL	PastureGard HL	WeedMaster
P	P - F	P	G - E	G	F

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Gallberry  
*Ilex glabra*

Photo Credit:  
Dr. Brent Sellers



This is an upright, clump-forming, perennial woody evergreen shrub. The leaves are alternate, evergreen, obovate to elliptic, 0.75 - 2" long, usually broaden upward, apex toothed. Gallberry becomes somewhat open with age and often loses its small lower branches. Female plants have berry-like, black drupes that occur from September to May of the following year. These 6 - 8' tall plants are especially valuable to birds for their persistent fruits and branch structures. The flowers of the plant appear in May, and the staminate (male) and pistillate (female) flowers occur on separate plants. The female flowers are solitary, and the male flowers are borne on a stalk consisting of 3 or more flowers. Both sexes of flowers have creamy white petals and are inconspicuous. It prefers damp pinelands for habitat.

Control

Remedy, but not very well.

Gambian dayflower  
*Commelina gambiae*



Herbaceous annual that grows 4 - 12" tall. It is stalkless, with blades linear to lance-shaped, 0.75 - 6" long and less than 1" wide, smooth or sparsely hairy on both surfaces. Two flowers contained in a leaf-like, boat-shaped bract, bract stalked, from leaf axils, bract sparsely hairy, about 0.5 - 0.75" long, flowers not quite 0.5" wide; three petals, upper two petals peach- or apricot-colored, lower petal white and tiny. Dayflower prefers moist to wet soils, floodplains and marshes.

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Banvel	GrazonNext HL	Metsulfuron	PastureGard HL	Remedy	WeedMaster
G	F	F	F	F - G	F	G	G	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Goatweed  
*Scoparia dulcis*



Photo Credit:  
Dr. Brent Sellers

Goatweed is a perennial herbaceous plant. Seedlings are extremely small, with opposite or whorled leaves occurring in numbers of three or more on the same node. Leaves are light green, serrated and approximately 1.5" by 1" wide. As the plants mature, leaves become linear with or without serrations. Leaves and stems contain small glands that emit an unpleasant odor when crushed. Stems are usually smooth, but sometimes have soft, fine hairs, and become woody with age. Flowers are white, about 0.1 - 0.2" long and borne in the leaf axils. Seeds are extremely small and enclosed in a yellow-brown capsule. Perennial goatweed plants at the height of their maturing look quite different from new seedlings because their leaves have become more linear, giving the plant a spindly appearance. Mature plants reach heights of 1 - 2.5'. For further information and control protocols, see EDIS publication [SS-AGR-299](#).

Control

2, 4 -D	Chaparral	Cimarron Plus or Xtra	Banvel	Vista XRT	Metsulfuron	Impose/ Panaramic	PastureGard HL	Remedy	WeedMaster
G	G	G	F - G	P - F	G	P	F	F	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Greenbrier  
*Smilax spp.*



Photo Credit:  
Dr. Brent Sellers

Greenbrier or smilax is a perennial vine with growth that starts out tender then turns woody with age and has numerous prickles along its viney stems. Leaves leathery, shape and size variable, commonly oblong, sometimes ovate, lanceolate, suborbicular, or fiddle-shaped to 4.7" long, 2" wide. Upper leaf surface is a dull green, lower leaf surface has somewhat raised veins and is a lighter dull green. Fruit is red to black with age, glaucous, shiny to 0.5" in diameter. It commonly grows in deep, sandy soils in disturbed sites, scrub, and coastal dunes; less common in marshes, savannahs, or flatwoods.

Control

Chaparral	Cimarron Plus or Xtra	Vista XRT	Metsulfuron
F	F	F - G	F

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Guinea Grass, Johnsongrass, & Vaseygrass



From left to right, guinea grass seedhead; johnsongrass seedhead; and vaseygrass seedhead.

Credit:  
Hunter Smith and Brent Sellers, UF/IFAS



From left to right, guinea grass leaf blade; johnsongrass leaf blade; vaseygrass leaf blade.

Credit:

Hunter Smith, UF/IFAS

Johnsongrass is a common perennial grass that grows throughout the South and Midwest. It is so common and well known as a troublesome weed that any large undesirable grass is often called johnsongrass. Distinguishing between johnsongrass, guinea grass and vaseygrass can help determine treatment options. All three grasses have a prominent white midrib that extends the length of the leaf. But few similarities exist beyond this characteristic. All three grasses are perennial, but only johnsongrass has a creeping rhizome system and grows in patches rather than in individual bunches. Vaseygrass and guinea grass are both bunch-type grasses without a significant rhizome system. Additionally, vaseygrass is most commonly found in wet fields or along drainage ditches. Johnsongrass and guinea grass prefer drier sites. Johnsongrass and guinea grass have an open panicle seedhead that is angular. Color and size are the key differences between johnsongrass and guinea grass seedheads. Johnsongrass seeds are much larger and have a red/black mottled color, while guinea grass seeds are smaller and somewhat green. Vaseygrass has a very different seedhead with alternating spikelets forming silky hairs around the seeds. Seeds are produced along the entire length of the seedhead branch, which does not occur in johnsongrass or guinea grass seedheads. For more information and control protocols, see EDIS publication [SS-AGR-363](#).

#### Toxicity Symptoms (Johnsongrass)

Johnsongrass is a cytogenetic plant. It contains a glucoside which yields hydrocyanic acid on hydrolysis, especially when the plant is under stress (drought/frost).

#### Control

	Impose/Panoramic	Outrider	Pastora
Guinea Grass	-	P	F – G
Johnsongrass	G	E	G
Vaseygrass	P – G	F	F – G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Hairy Indigo  
*Indigofera hirsuta*

Photo Credit:  
Dr. Brent Sellers



Hairy indigo is an annual or sometimes biennial legume. Plants tend to be woody at the base and covered with long reddish-brown hairs. Leaves are compound with 5 to 9 oval leaflets that are hairy on the underside. Flowers are salmon to maroon, pea-like and arranged in dense clusters. The fruit is a hairy, four-angled pod that is nearly 2" long and droop downwards in clusters. This plant is similar to creeping indigo, but has upright growth and the entire plant is extremely hairy.

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Banvel	GrazonNext HL	Metsulfuron	Milestone	PastureGard HL	Remedy	WeedMaster
F - G	E	E	F - G	E	E	E	G - E	G	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Horseweed (Marestail)  
*Conzya canadensis*

Photo Credit:  
Dr. Brent Sellers



Horseweed is an annual or biennial opportunistic weed that prefers dry, disturbed land. Plants first grow as a rosette with entire and lobed leaves. Leaves on the bolting stem are alternate 0.7 - 4" long, toothed or entire, smooth or sparsely haired with ciliated margins. Stems are erect 3 - 6' tall. Pea-sized greenish-white flowers appear in late summer and fall in large terminal clusters. Seeds germinate in the fall and plants can overwinter, but they also sprout in the spring and early summer if the soil is moist. Horseweed prefers cultivated areas, pastures and roadsides.

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Banvel	GrazonNext HL	Metsulfuron	Milestone	PastureGard HL	Remedy	WeedMaster
F	G	F	E	E	F	E	G	G	E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Jamaican Nightshade  
*Solanum jamaicense*



A many branched perennial shrub, sprawling up to 9' and is covered with dense, star shaped hairs; stems flexuous and armed with numerous, short, recurved prickles. It has alternate leaves in pairs or solitary, sessile or nearly so, densely pubescent and often with prickles along lower midribs. Flowers are white, inconspicuous. It has glossy red berries.

Toxicity Symptoms

Ingestion by livestock, like for all species in the nightshade family, result in digestive disturbance and/or depression. In some cases, neurological conditions occur, known as crazy cow syndrome where animals appear normal until they are stressed/disturbed at which time they fall and struggle to stand without success until they rest for a few minutes. These neurologic symptoms are not life threatening.

Control

GrazonNext HL

Jimsonweed  
*Datura stramonium*



Jimsonweed is a branching herbaceous annual plant, with large flowers, and it possesses a disagreeable odor. It belongs to the nightshade family (*Solanaceae*) and is a weed of concern for both humans and livestock, owing its poisonous nature to certain alkaloids present in all plant parts, especially in the seeds. It can grow 3 - 5' tall and is characterized by thick purple stems and large, white to purple flowers. Black seeds with a hard seed coat are borne in a spiny pod that splits open along four sutures. Seeds can remain dormant in the soil for more than 40 years.

Toxicity Symptoms

Dryness of mouth, rapid pulse and respiration, partial blindness and frequent urination or retention of urine are common symptoms in cattle. Diarrhea, dilation of the pupils of the eyes and stiffness also have been observed. In the terminal stages of illness respiration becomes slow, weak and irregular, while the pulse becomes rapid and feeble, with death resulting from asphyxia. Convulsive twitching of the entire body is described as an outstanding symptom in hogs.

Control

2,4-D	Banvel	PastureGard HL	Remedy	WeedMaster
G	G	G	G	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Lantana  
*Lantana camara*



**TOXIC**

Photo Credit:  
Dr. Brent Sellers

Lantana is a perennial branching shrub reaching 6.5 ft in height. Stems are 4-angled, hairy, with a few scattered thorns on stems and branches. Older stems may be more rounded than angled. Leaves are opposite, oval, and covered with glandular hairs that produce a strong odor. Leaf texture is rough, and margins are toothed. Flowers are cream, yellow, or pink turning red or orange; some varieties have cream yellow and blue-purple flowers. This plant flowers abundantly throughout much of the growing season and was first introduced in many southern states as a perennial ornamental. Some of these same chemicals give lantana an acrid taste and deter insects or other animals from consuming the leaves. These leaf toxins are damaging to grazing animals.

Toxicity Symptoms

The acute type of poisoning is induced when the animals eat a considerable quantity of the plant. The affected animal shows symptoms of sluggishness or extreme weakness; the stools usually are soft and bloody; food is refused; occasionally partial paralysis of the legs occurs; death usually occurs within 4 days. Affected animals usually become constipated, particularly in the early stages of poisoning, although later the stools may become soft. Areas of the skin and mucous membranes show a yellowish discoloration. The skin of the muzzle, ears, neck, shoulders, legs, udder or other part of the body becomes yellow, swollen, hard, cracked, and painful.

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Banvel	Vista XRT	GrazonNext HL	Metsulfuron	PastureGard HL	Remedy	WeedMaster
P	P	P	P	F - G	P	P	P - F	P - F	P

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Maypop, Passion-flower  
*Passiflora incarnata*



Photo Credit:  
Dr. Brent Sellers

Maypop is a perennial deciduous vine native throughout Florida. The leaves are alternate 2- 6" long and wide, and palmately lobed. It produces long underground runners (rhizomes) and many shoots, making control difficult. Stems are erect and climbing up to 6' long. Fruit is fleshy, green, egg-shaped, turns yellowish green with age and is hollow (pops open with pressure). It is propagated by seeds and rhizomes. It prefers cultivated areas, fields, pastures and roadsides.

Control

Outrider	PastureGard HL	Remedy	WeedMaster
P	G	F	P - F

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Matchweed  
*Phyla nodiflora*



Photo Credit:  
Dr. Brent Sellers

Matchweed is a mat-forming perennial with opposing leaves on hairy branching stems. Leaves have small teeth at the outer tip and tiny hairs on both surfaces. The purple to white flowers emerge around the tip of the seed stalk forming a “match head” appearance. Matchweed spreads by both seeds and stolons.

Control

2,4-D	Banvel	Vista XRT	GrazonNext HL	Milestone	PastureGard HL	Remedy	WeedMaster
G	G	F - G	G - E	G	G	G	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Mexican Prickly Popper  
*Argemone mexicana*



Photo Credit:  
Dr. Brent Sellers

Mexican prickly poppy is a member of the poppy family. It is an annual or biennial plant that is found in the southern half of the continent. In Florida, it is typically recognized as 'some type of thistle' until it flowers. Young Mexican prickly poppies are often mistaken for thistles because their toothed and prickly leaf margins give them a thistle-like appearance. One recognizable difference is that Mexican prickly poppy exudes a yellowish milky sap when its stem is broken, while thistles do not. Plants grow to 3' tall. Leaves are alternate and clasp the stem. Flowers are solitary, yellow, with 4 to 6 petals. Seeds are enclosed in a spiny, oblong capsule. Like thistles, Mexican prickly poppy reproduces only through seed production. It is seen along roadsides, on sandy creek banks, in floodplains, and in disturbed areas.

Toxicity

Highly unpalatable, the foliage is rarely eaten by livestock, and the seeds seem to represent the greatest hazard when they contaminate grains fed to livestock, especially poultry. The seeds are similar in appearance to those of black mustard, and plants are common weeds in various cereal grains.

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Banvel	Vista XRT	GrazonNext HL	Milestone	PastureGard HL	Remedy	WeedMaster
G	E	G	G - E	G	E	E	E	E	G - E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Milkweed  
*Asclepias spp.*

Photo Credit:  
Edward Gilman



Milkweeds are perennial herbaceous weeds. Leaves are opposite on the stem and can sometimes appear whorled (more than 2 leaves originating from the node). Individual leaves are nearly smooth, and linear to elliptic in shape. Plants can grow from 2-4' tall and flower nearly year-round in southern Florida. It prefers sandy, acidic, well-drained soils. Due to the flower color, this plant can be confused with Lantana, however, milkweeds have milky sap. All milkweed species should be considered poisonous to livestock; however, it is rarely consumed by animals unless desirable forage is scarce.

Control

2,4-D	Banvel	GrazonNext HL	Milestone	PastureGard HL	Remedy	WeedMaster
F - G	G	F - G	F - G	F - G	F - G	F - G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Nutsedge  
*Cyperus spp.*

Photo Credit:  
Angela Colonna



Yellow and purple nutsedge are upright herbaceous perennials that have triangular stems and bright leaves. Leaves are basal, linear, with a prominent midvein. The leaves are usually longer than the flower stalk. The yellow nutsedge has runners that end at tubers and do not connect plants, while the purple variety forms a chain of plants. Yellow nutsedge leaf tips come to a point as compared to the thicker tip of purple nutsedge. Seeds form at the end of a stiff stalk. Yellow nutsedge seeds are yellow to brown and purple nutsedge are purple in color. Nutsedge prefers cultivated areas, fields, pastures, lawns, roadsides or wetlands. There are many annual nutsedge species. All species have leaves in threes, and a cross section of the stem is triangular.

Control

Impose/Panaramic	Outrider
G - E	E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Pawpaw  
*Asimina spp.*



Photo Credit:  
Dr. Brent Sellers

Pawpaw is a perennial shrub that can reach heights of 5' but is generally about 2' tall. The leaves are simple, alternately arranged, deciduous, and 1½" - 4" long by ¾" - 2¼" wide. The narrow elliptical shaped leaves usually have fuzzy upper surfaces while the underneath surface is veiny and also fuzzy. The leaf base is wedged to round, and the leaf tip is rounded. The leaf margin is smooth. Pawpaw grows in the well-drained sandy soil ridges of sandhills, longleaf pine-scrub oak, old fields, and pine flatwoods where little or no saw palmetto occurs.

\*Note: Some of these species are endangered and care should be taken to ensure that we are not destroying an endangered *Asimina* species.

Control

Cimarron Plus or Xtra	Vista XRT	Metsulfuron	PastureGard HL	Remedy
F	F - G	F	F - G	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Spiny Pigweed  
*Amaranthus spinosus*



Photo Credit:  
Dr. Brent Sellers

Spiny amaranth, also known as spiny pigweed, is very common throughout Florida. Plants grow up to 3' tall with smooth stems that are often reddish and contain paired spines where leaves attach to the stem. Leaves are alternate and ovate in shape with smooth edges. Flowers are pinkish to white and are densely formed on long, slender, terminal and axillary spikes. This weed is an abundant seed producer with well over 100,000 seeds per plant produced each year. The seeds germinate throughout the warm summer months, and each rainfall event results in another flush of spiny amaranth plants. Intoxication problems are primarily related to ingestion of weed are myocardial degeneration, renal disease, and nitrate intoxication.

Control

Chaparral	Cimarron Plus or Xtra	Banvel	GrazonNext HL	Metsulfuron	Impose/ Panaramic	Milestone	Remedy	Velpar	WeedMaster
E	E	E	E	E	G	E	E	G	E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Prickly Pear  
*Opuntia humifusa*



Photo Credit:  
Dr. Brent Sellers

Prickly pear is a shrubby succulent perennial forming mats or clumps and is usually 12" tall. Stem segments are round to broadly elliptical, fleshy, flattened, and green. Leaves are alternate, quickly deciduous and are spaced along the surface in spine-bearing areas (areoles). Areoles with 0-2, 1" round and gray spines. Flowers are yellow, often with a red center and cup-shaped, and occur at the tips of last year's segments. The fleshy fruit is an ovoid berry, wider at the tip and 1 to 3 inches long. Prickly pear prefers dry sandy rock soils or bedrock.

Control

Milestone	PastureGard HL	Remedy	Velpar	Vista XRT	WeedMaster
P	F – G <sup>1</sup>	G <sup>1</sup>	P	G	P – F

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control  
<sup>1</sup>When applied as a spot-treatment in basal oil.

Pokeweed  
*Phytolacca americana*



Photo Credit:  
Dr. Brent Sellers

Pokeweed, a native to the eastern half of North America, is a perennial weed often found in pastures as well as fence rows, rights-of-way, reduced-tillage row crop fields, and wooded areas. Once it becomes established, it regrows each year from a large, fleshy taproot. The crown of the root is where the plant is regenerated and can be as large as 5 1/2" in diameter at the soil surface within two growing seasons. It usually has a red trunk-like stem, which becomes hollow as the plant matures. Leaves tend to be quite large (10" long), alternate, ovate-shaped, dark green, and attached to the stem by a red, fleshy petiole. When flowering, individual flowers appear green to white and are typically without petals. Fruits are green when immature and turn a deep purple to black at maturity.

Toxicity Symptoms

Symptoms occur about 2 hours after the plant has been consumed. Severe gastric intestinal irritation occurs. Nausea, vomiting, purging, retching, spasms and severe convulsions occur, with death resulting from paralysis of the respiratory organs.

Control

2,4-D	Banvel	Vista XRT	GrazonNext HL	Milestone	PastureGard HL	Remedy	WeedMaster
G	E	P	P	F	P	P	E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Ragweed Parthenium  
*Parthenium hysterophorus*



Photo Credit:  
Nick Russakis

Ragweed is an erect, much-branched herbaceous plant that forms a basal rosette of leaves during the juvenile phase. It usually grows 1.5 - 4' tall but can occasionally reach up to 6' or more in height. Leaves are opposite near the base and alternate apically and are 1.5 - 4" long. Ragweed parthenium is found on roadsides, along railways, pastures, grasslands, seasonal flood plains, open woodlands, riparian zones (banks of water courses), waste areas, disturbed sites, lawns, gardens, and multiple crops

Control

2,4-D	Chaparral	GrazonNext HL	Milestone	PastureGard HL	Remedy	WeedMaster
E	E	E	E	E	E	E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Redroot

*Lachnanthes caroliniana*



Photo Credit:  
Dr. Brent Sellers

Redroot is perennial upright plant that can reach 11" - 4' tall. The most readily identifying features of this plant are the characteristic red rhizomes and the flattened leaves. Basal leaves are overlapping. Flowers are yellow with persisting petals. It is a wetland plant that grows in environments ranging from shallow standing water to seasonally wet flatwoods soils. For more information and control protocols, see EDIS publication [SS-AGR-290](#).

Control

Chaparral	Cimarron Plus or Xtra	Vista XRT	Metsulfuron	Impose/ Panoramic	PastureGard HL	Remedy	WeedMaster
P - F	P - F	P - F	P - F	F - G	F - G	G	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Saltbrush  
*Baccharis halimifolia*

Photo Credit:  
Dr. Brent  
Sellers &  
UF/IFAS



Saltbrush is perennial tree that can reach 13' in height. Leaves are alternate, thick, green 1.5 - 2.7" long and 0.3 - 1.5" wide. The yellow and white flowers bring this rarely noticed plant into view in the fall landscape. The 1 - 3" long leaves and shrubby habit allow it to blend into the background in most landscapes. Seeds are poisonous if they are eaten. Saltbrush trees prefer coastal areas such as the upper edges of marshes and extending into sandy areas.

Control

Milestone	PastureGard HL	Remedy	WeedMaster
P	G - E	E	F

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Shrubby Camphorweed  
*Pluchea odorata*

Photo Credit:  
Dr. Brent Sellers



It is an annual or perennial herb growing erect to a maximum height over 3'. It is glandular, coated in rough trichomes (hairs), and strongly aromatic. The toothed oval leaves are up to 4.7" long and alternately arranged on the stiff stems. The inflorescence is a large cluster of many flower heads. Each head is less than 0.4 " long and filled with bright pinkish-purple or magenta flowers. It inhabits wetlands and other coastal habitats and moist inland areas, often in saline substrates.

Control

2,4-D	Banvel	GrazonNext HL	PastureGard HL	Remedy	WeedMaster
F - G	F - G	G	G	F - G	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Sicklepod  
*Cassia obtusifolia*

Photo Credit:  
Dr. Brent Sellers



Sicklepod is an annual, herbaceous to semi-woody legume that has alternate, compound leaves composed of 4 to 6 opposite, egg-shaped leaflets. Leaflets farthest from the stem are larger than those closest to the stem. Cotyledons are rounded and usually have 3 to 5 prominent veins. Plants are erect with smooth, branched stems, and plants may grow from 1 - 7' tall. Sicklepod has bright, yellow flowers, and it produces seed in 3 - 8", curved pods. It is often confused with coffee senna; however, sicklepod leaves are rounded whereas coffee senna leaves are pointed. Sicklepod is native to the American tropics, but it is commonly found throughout the southeastern United States. It prefers sandy soils and often becomes a serious pest in fields and pastures.

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Banvel	Vista XRT	GrazonNext HL	Metsulfuron	PastureGard HL	Remedy	WeedMaster
G	G	G	E	G	G	G	G - E	E	E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Smutgrass  
*Sporobolus indicus* and *Sporobolus jaquemontii*

Photo Credit:  
Dr. Brent Sellers



Both smutgrass species—small and giant—are perennial bunch grasses. Average bunch size of small smutgrass is approximately 8 - 10" in diameter while giant smutgrass diameter is approximately 12 - 18". Small smutgrass has a compact seedhead with the panicle branches touching the panicle. Small smutgrass plants produce approximately 1,400 seeds per seedhead and 45,000 seeds per plant. In contrast, giant smutgrass has an open seedhead with panicle branches directed somewhat upward. The seeds, which are red to orange in color, remain attached to seedheads for some time after maturing and are spread by adhering to livestock and machinery or by movement via water and wind. Smutgrass will grow almost anywhere but prefers well-drained soil.

Control

Smutgrass requires a multi-year approach for control and eradication. Please see EDIS publication [SS-AGR-18](#), Smutgrass Control in Perennial Grass Pastures, for products and protocols.

Soft Rush  
*Juncus effusus*



Photo Credit:  
Dr. Brent Sellers

Soft rush, often called bulrush, is a clump-forming perennial plant. Leaves are limited to small, brown scales near the base of the stems. Stems are cylindrical, pointed, and can reach up to of 5' in length. The inflorescence is a many-flowered, loosely clustered panicle, approximately 1 - 2 "long. Seed production is extremely high with each shoot capable of producing 8,500 seeds per year. Soft rush frequently infests low-lying areas in Florida pastures and is typically found in pastures that are seasonally wet with alternating wet and dry seasons. For more information and protocols, see EDIS publication [SS-AGR-325](#).

Control

2,4-D	Banvel	GrazonNext HL	PastureGard HL	WeedMaster
G	F – G	F – G	F	F – G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Southern Sandbur  
*Cenchrus echinatus*



Photo Credit:  
Hunter Smith

Southern sandbur is an annual grass and has a shallow, fibrous root system. Southern sandbur has a smooth, open leaf sheath that can have fine hairs along its margin. Stems are 0.5' - 3' long, round with a reddish tint ascending from a bent base growth habit. The leaf blades are flat with very short, thick hair on top and a smooth glabrous surface below. The seedhead of southern sandbur has a raceme orientation with spiny burs attached directly to the floral stalk. Each bur contains 1 to 3 seeds, and they are easily dispersed when the spines attach to animals, clothing, or machinery. This native grass is adapted to dry, sandy soils. For more information and control protocols, see EDIS publication [SS-AGR-364](#).

Control

Impose/Panoramic	Pastora
G – F	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Spanish Needle  
*Bidens alba*

Photo Credit:  
Dr. Brent Sellers



This upright annual herbaceous plant grows up to 36' in height. Established plants may develop a somewhat woody stem with age. Stems are 1 - 5' long with opposite leaves 1.5 - 6" in length 0.7 - 1.9" wide. Spanish needle flowers are solitary at the ends of the branches. Each flower has 5 white petals with yellow, shorter florets. They prefer disturbed soils, fence rows, fields, pastures, yards and gardens.

Control

2,4-D	Chaparral	GrazonNext HL	Milestone	PastureGard HL	Remedy	WeedMaster
G - E	E	E	E	E	E	E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Spider-flower, Skunkweed  
*Gynandropsis gynandra (Cleome gynandra)*



Spider-flower or Skunkweed is a warm season herbaceous annual. Stems are erect 16 - 23" long, simple branched with alternate leaves, palmately compound 0.7 - 3.1" long. It has flowers that are pink to lavender or white with four petals, with filaments up to 1". Leaves have a pungent odor. It is often found in open areas, woodland edges, and disturbed sites.

Control

2,4-D	Chaparral	GrazonNext HL	Milestone	PastureGard HL	Remedy	WeedMaster
G	G	G	G	F-G	F-G	G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Teaweed/Arrowleaf Sida  
*Sida rhombifolia*

Photo Credit:  
Dr. Brent Sellers



Arrowleaf Sida is woody perennial commonly known as teaweed, ironweed, or southern sida. Leaves are broad and lance shaped growing in an alternate pattern. Stems are erect, and smooth and usually unbranched. Flowers are solitary in leaf axils, pale yellow. It is a spring emerging broadleaf commonly found in pastures, pinelands, hammocks, and disturbed areas. It has drought resistance and adaptability to a wide variety of soil types

Control

2,4-D	Chaparral	Cimarron Plus or Xtra	Banvel	GrazonNext HL	Metsulfuron	PastureGard HL	Remedy	WeedMaster
P	G	G	G	G	G	G	G	F – G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

**Nuttall's thistle**  
*Cirsium nuttalli*

Photo Credit:  
Dr. Brent Sellers



Thistle is an herbaceous biennial plant that sometimes grows more like an annual. It has erect stems reaching 6' tall, stout pubescent long delicate trichomes. The leaves are rosette at the base and alternate upward 4 - 12" long and 1.1 -3.9" wide, elliptic, dissected, each division spine tipped. The flowers are purple sessile in a whorl of leaflike bracts. Thistles are found in open pastures, field and roadsides.

For more information and control protocols, see EDIS publication [SS-AGR-95](#).

Control

2,4-D	Chaparral	Banvel	Vista Xtra	GrazonNext HL	Milestone	PastureGard HL	Remedy	Velpar	WeedMaster
E	E	G	G	E	E	G - E	E	E	E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Torpedograss  
*Panicum repens*

Photo Credit:  
Telenko



Torpedograss is an erect warm season perennial. It is called torpedograss because of its sharply pointed or torpedo-like growing tips. Torpedograss can grow up to 3' tall, with hairy leaf sheaths and hair on the upper margins of the leaves. Leaf blades are 1.9 - 8" long, 0.07 - 0.19" wide, stiff, linear, flat or folded, the surface often with a waxy or whitish coating. Torpedograss has a panicle-type inflorescence, 3 - 9" long. It prefers wetland areas, fields, roadsides and lawns.

Control

Imazapyr	Glyphosate
E	G

NR=Not recommended; F=Fair; G=Good; E=Excellent. Blank cells indicate insufficient data.

Tropical Soda Apple  
*Solanum viarum*

Photo Credit:  
Dr. Brent Sellers



Tropical soda apple is a serious weed problem in many perennial grass pastures and native areas of Florida. At maturity, it is 3 - 6' tall and can be as wide as it is tall. Stems, leaves, flower stalks and calyxes have broad-based, white to yellowing thorns up to 0.4" long. Pubescent leaves are 4 - 7" long and 2 - 6" wide, deeply divided into broad, pointed lobes. Flowers are white with yellow stamens, a few together on stems below the leaves. Fruits are glabrous, globular, about 1" in diameter, and yellow when mature. Seeds are light red-brown, and 0.10" in diameter. Seeds are only moderately flattened, contained in a mucilaginous layer that contains a glyco-alkaloid called solasodine.

Control

Chaparral	Banvel	Vista XRT	GrazonNext HL	Milestone	PastureGard HL	Remedy	Velpar	WeedMaster
E	F - G	F	E	E	G	G - E	F - G	F - G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Tropical Whiteweed  
*Ageratum conyzoides*

Photo Credit:  
Ramdas  
Kanissery,  
UF/IFAS



Tropical whiteweed is considered a common weed of agriculture crops, wetlands, roadsides, and pastures in many parts of the world. Stems are erect with soft hairs and grow to 3'. Leaves are lanceolate to broadly ovate with serrated margins. Leaves are opposite arranged on the stem attached by long, hairy petioles. Flowers are blue, purple, pinkish, or white in color. Although this species has been documented in Florida since the 1940s, it has recently become problematic in natural areas, pastures and rangeland, and citrus groves. In citrus groves, tropical whiteweed spreads quickly if not managed properly.

Control

Chaparral	Cimarron Plus or Xtra	Banvel	GrazonNext HL	Metsulfuron	Impose/Panaramic	Milestone	Remedy	Velpar	WeedMaster
E	E	E	E	E	G	E	E	G	E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Virginia Pepperweed  
*Lepidium virginicum*

Photo Credit:  
Donald Hall



Virginia pepperweed is an annual or biennial plant. The lower leaves form from a basal rosette and are deeply lobed. The stem is smooth to hairy and is erect and freely branched. The mature plant does not contain any basal rosette leaves, and the leaves on the stem are alternate and more lanceolate than the basal leaves. The flower is produced from May through early summer. The flowers are white and form in a finger-like cluster or bottlebrush at the top of the plant. The seeds germinate in late summer or early fall. Limited germination occurs in the spring. It can be found in disturbed sites all throughout the United States except Arizona and New Mexico.

Control

2,4-D	Banvel	Vista XRT	PastureGard HL	Remedy	Velpar	WeedMaster
G	E	G	G	P	E	E

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

Wax Myrtle  
*Morella cerifera*



Photo Credit:  
Dr. Brent Sellers

Southern wax myrtle, also commonly referred to as wax myrtle or, simply, myrtle, is a commonly found evergreen shrub/small tree. It can grow up to 39' tall, often with several trunks and dense foliage. It produces a small conspicuous rounded, waxy bluish drupe. It is native to Florida and is often found in fencerows, pond and marsh edges, pine plantations, hammocks, rangeland, and pastures.

Control

Remedy on plants 3 ft tall or less; if larger roller chop or mow and treat 3 ft. tall regrowth with Remedy

West Indian Marsh grass  
*Hymenachne amplexicaulis*



West Indian marsh grass can form large stands and is well adapted to flooding conditions. The plant is a stoloniferous, perennial grass, 3 – 8' in height. Leaf blades are 3 – 19" long and up to 1 ½" wide, mostly lanceolate and cordate at the base. The glabrous stems are erect or ascending from a prostrate base and are filled with white pith (aerenchyma). The panicles are narrow, spike-like, cylindrical, 7 – 15" long and are present starting in July in central Florida.

Control

Imazapyr	Glyphosate
E	G

NR=Not recommended; F=Fair; G=Good; E=Excellent. Blank cells indicate insufficient data.

Whitehead broom  
*Spermacoce verticillata*

Photo Credit:  
Dr. Brent Sellers



Whitehead broom, also known as shrubby false buttonweed or southern larrflower, is becoming problematic in south Florida pastures, hayfields, flatwoods, disturbed sites, and rights-of-way. It is a perennial plant with multiple branches that are capable of rooting at the nodes. It has leaves that are opposite, smooth, and almost linear, tapering to a point at both ends. Multiple leaves are often present, giving a whorled appearance at the nodes. Small white flowers are arranged in clusters at the upper nodes of each branch. During the first year of growth, the stem is herbaceous and angled, but the angles round off and the stem turns woody with age.

Control

Chaparral	Cimarron Plus or Xtra	Metsulfuron	Velpar
P - F	P - F	P - F	F - G

Weed control symbols: E = 90-100% control, G= 80-90% control, F = 60-80% control, P = < 60% control

