Introduction

Perennial warm-season pasture grasses used in Florida become dormant in late fall and winter because of short days, cooler temperatures, and frosts. Many livestock producers may choose to establish cool-season annual pasture species to supplement their forage production. These plants are usually higher in total digestible nutrients (TDN) and crude protein (CP) than summer perennial grasses, translating into greater animal performance (Dubeux et al. 2016). Planting and growing these forage crops can involve considerable expense and are somewhat risky because rainfall is often unpredictable during the fall establishment period. The species and varieties for potential use vary in the distribution of production during the cooler months and in the type of soils where they are best adapted.

Many cool-season forages are also grown as silage crops and/or cover crops. Cool-season legumes such as vetch and lupine can produce a significant amount of biomass and fix 40 lb N/A to 80 lb N/A. Similar characteristics in terms of productivity and disease resistance should be considered when planting those species as silage or cover crops. For those uses, delaying planting is sometimes recommended to avoid the need for irrigation early in the fall. However, that decision depends on intended use. If multiple silage cuttings are desired, planting may occur at the same time as normally recommended planting dates for grazing; however, harvesting must occur when plants are still in the vegetative stage to avoid potential freeze damage or winter kill of the stand. In some years, early planting for silage or cover cropping has made stands susceptible to diseases, insect pests, freeze damage, and lodging.

Many producers cut back on seeding rates and use “brown bag” seeds when planting cover crops, which frequently results in weak or thin stand establishment and lower productivity. A fast soil cover is desirable for weed management (competition) and erosion control. The use of certified seeds is always recommended to guarantee proper seed quality and purity, and to enhance good pasture establishment. When planting legumes, seed can be purchased already inoculated with rhizobia (specific bacterial strains for nitrogen fixation). However, fresh rhizobium inoculation applied prior to planting helps to ensure viability of inoculum. There are specific rhizobium strain inoculants for some groups of legumes. More information can be found in Ask IFAS publication SS-AGR-154, “Inoculation of Agronomic and Forage Crop Legumes” (https://edis.ifas.ufl.edu/publication/AA126).
This publication provides the most up-to-date information on adapted cool-season forage varieties for our growing season. The recommendation of varieties is based on multi-location, multi-year cultivar evaluation experiments that may include trials in Florida, Georgia (https://georgia-forages.caes.uga.edu/species-and-varieties/variety-trials/forage-variety-trial-information.html), Alabama (https://aaes.auburn.edu/blog/2023/07/15/2022-2023-winter-forage-summary-tables/), and other states. Table 1 includes information about planting dates, seeding rates, and other considerations. Other resources that provide more in-depth discussion of each of the species or group of species are available at Ask IFAS. For a list of publications, access our “Technical Publications” section of the UF/IFAS Forage Team website (https://programs.ifas.ufl.edu/forage/technical-information/). If you have questions about a particular variety, contact your local UF/IFAS Extension agent for additional information (https://sfyl.ifas.ufl.edu/find-your-local-office/).

**Recommended Cultivars (Varieties)**

**Alfalfa**

Alfalfa is usually grown as a winter short-term perennial (less than 2 years) in Florida and is typically used for haylage, green chopping, or hay. This species is not widely cultivated in the state; it is normally restricted to the Panhandle and drier (higher) areas in north Florida. It requires good management practices for establishment and maintenance as well as high fertility levels, and it is not tolerant to flooding or soils with high water tables. Soil pH of 6.5 or greater is needed for alfalfa production. However, the cost of producing alfalfa haylage and silage has decreased in recent years, and this has made it a viable and cost-effective option as a high-quality, conserved legume forage. Some new cultivars have been developed to tolerate a certain amount of grazing, but they are not as grazing-tolerant as other legume species, such as most of the clovers. When planted in the fall, it is expected to have a first hay cut around early spring, then monthly afterwards. However, subsequent cuts might be challenging given Florida's humid conditions and competition with weeds.

**RECOMMENDED VARIETIES**

Alfagraze 600RR (Roundup Ready) and Bulldog 805.

**Clover, Arrowleaf**

Arrowleaf clover is an annual species, similar to crimson clover in soil adaptation, management, and fertility requirements. It is mainly grown on heavier soils in northwestern Florida. Arrowleaf clover grows later in the spring than crimson clover.

**RECOMMENDED VARIETIES**

Blackhawk and Apache (for north and central Florida). Yuchi is not recommended because it is an older variety and is more susceptible to disease. Blackhawk and Apache have improved virus resistance compared to Yuchi.

**Clover, Ball**

Ball clover grows on a wide range of soil types, including poorly drained soils. Although it is well adapted, it is not considered to be a highly productive forage in Florida.

**RECOMMENDED VARIETIES**

Don and Grazer's Select.

**Clover, Berseem**

Berseem clover has low bloat potential and is well adapted to many soil types in Florida, including more alkaline and wet soils. Care should be given to the management of berseem clover when grazed. It is advisable to graze at about 10 inches and leave a stubble height of 3–4 inches.

**RECOMMENDED VARIETIES**

Bigbee and Frosty.

**Clover, Crimson**

This clover is a reseeding annual adapted to fertile, well-drained soils. It has a relatively short grazing season. Crimson clover may be grown in combination with ryegrass or a small grain crop.

**RECOMMENDED VARIETIES**

Most of the seeds available in the market are Dixie, but AU-Robin and AU-Sunrise are also recommended. Both have limited seed availability.

**Clover, Red**

Red clover behaves as a winter annual under Florida conditions and usually does not reseed itself. It does not tolerate poorly drained soils. Red clover provides long-season forage production in north Florida.

**RECOMMENDED VARIETIES**

Barduro (mid-dormant, released by UF/IFAS), Red Ace, Southern Belle (non-dormant, released by UF/IFAS).
Southern Belle is a non-dormant red clover. It offers earlier forage production and greater total-season forage yields than more dormant varieties. Barduro is a UF/IFAS red clover cultivar that is a mid-dormant type. Bulldog Red is also marketed in the southeastern United States, but data are limited on its performance in Florida.

**Clover, White**

White clover is usually a winter perennial but may act as an annual, depending on moisture conditions. It is adapted to moist soils throughout Florida and is moderately tolerant to acidity. Production and persistence of white clover can be limited by nematodes and other pests.

**RECOMMENDED VARIETIES**

Louisiana S-1, Ocoe (released by UF/IFAS, nematode-tolerant), Osceola (released by UF/IFAS), Regal Ladino, and Regalgraze. Durana is also well adapted, has a prostrate growth habit, and persists well under grazing, but it has lower initial forage yields.

**Fescue, Tall**

In general, fescue is not recommended for Florida. It does not persist as a perennial, and small grains and ryegrass are more productive as cool-season annuals. A few producers have had limited success with Ga-5 when planted on low, wet clay soils in northwestern Florida.

**RECOMMENDED VARIETIES**

None.

**Lupine**

Lupine is an annual plant adapted to well-drained soils in northern and western Florida. It is an excellent cover crop. Seed supply has been low in recent years, and forage production has been limited by diseases and insects. Only sweet lupine varieties are suitable for forage.

**RECOMMENDED VARIETIES**

Tifblue. Frost and Tifwhite are also recommended; however, commercial seed production and availability of these lupine varieties have been limited.

**Medic**

Medics are small-seeded legumes that grow on a wide range of soil types. Although they are well adapted, they are not considered to be highly productive forages in Florida.

**RECOMMENDED VARIETIES**

Armadillo burr and Devine little burr.

**Oat**

Oat is very palatable and grows well as cool-season grass, but it may be injured under hard freezing conditions depending on growth stage and not well-adapted to wet soil. Oat may be planted and grazed earlier than rye. Legend 567 and Horizon 720 were considered crown rust-resistant varieties, but rust has been reported in the past few years. Symptoms ranged from mild infection to early plant senescence. In grazing systems, crown rust resistance is less critical because rust inoculum is reduced by grazing. Other commercially available varieties of oat are often very productive, although susceptible to crown rust. Early planting of susceptible varieties is not recommended. Few fungicides are labeled for use in grazing systems, and many have hay use limitations. Oat as a cover crop is underutilized, but can be a great alternative to rye (with generally cheaper seed); it can be used for hay, silage, and grazing if needed. Horizon 306 and RAM LA 99016 are excellent forage types that exhibit winter hardiness and good grain production, but are late-producing and susceptible to the new strain of crown rust that is prevalent statewide. Susceptible oat plantings may need to be scouted for rust and treated with legal fungicides, particularly if grown for silage or grain. Barley yellow dwarf virus (BYDV) is an aphid-transmitted virus that may injure some varieties, especially Cocker 227. Improved varieties have better field resistance to BYDV, but all can show some level of incidence of the disease. Typically, early-planted oat varieties grown for grazing are not sprayed with insecticides for aphid control. Grazing reduces populations of aphids but may not prevent early infection of BYDV in early-planted situations where warm fall weather prevails.

**RECOMMENDED VARIETIES**

Juggernaut, Horizon 306 (late), Horizon 578, Horizon 720 (moderately resistant to crown rust), Legend 567 (moderately resistant to crown rust), PlotSpike Forage Oat, RAM LA 99016 (moderately crown rust-susceptible) and RAM FLLA11019-8 and TriCal Cadillac (early variety).

Note: The RAM brand is substituting LA 99016 by RAM FLLA11019-8 this year. Stock of the older variety might still be available as carry over from the previous year. A cold spell in the winter of 2022–2023 resulted in significant losses in oat plantings across the state. Horizon 306 and RAM LA 99016 are considered late types and more cold tolerant, but are still less productive and more disease prone than other options. Rust races can change, and previously resistant cultivars can show symptoms of disease.
**Peas, Austrian Winter (Common)**
This annual legume is best suited to well-drained soils with high clay content.

**RECOMMENDED VARIETIES**
Austrian (common).

Other varieties in the market are Icicle and Keystone. They performed well in some of our trials, but have not been broadly tested at this time.

**Rye**
Rye is the small grain most widely used for winter grazing. Rye is more cold-tolerant than oat and generally produces more forage than either oat or wheat. If rye is planted very early in the season, there may be a decreased stand caused by various seedling diseases. Normally, rye developed from northern states produces little forage in late fall or early winter and tends to be severely damaged by leaf rust. Therefore, only plant varieties recommended for the southeastern United States. FL 401 is one of the earliest and most productive cool-season varieties, but it is generally used more for harvesting or cover cropping rather than for grazing because of the low leaf-to-stem ratio.

**RECOMMENDED VARIETIES**
FL 401 (for early grazing and cover cropping, or use in blends), Kelly Grazer III (FL 104, late variety) and Wrens Abruzzi (late, full season). Late-forage season producers developed in Oklahoma such as Bates RS4, Elbon, Oklon, Maton, and Maton II have performed well in the past, but have not been evaluated in recent trials.

**Ryegrass**
Ryegrass is a valuable mid- to late-winter and spring grazing crop for use on flatwoods soils or the heavier sandy loam soils in northwest Florida. Ryegrass may be seeded alone or with a small grain on a prepared seedbed, or overseeded onto permanent grass pastures. Seeding ryegrass with a small grain crop lengthens the grazing season.

**EARLY RECOMMENDED VARIETIES**
Attain, Big Boss, Diamond T, Earlyploid, Flying A, Fria, Frostproof, Grits, Prine, Rapido, RML4, TAMTBO, and Whitehawk.

**LATE RECOMMENDED VARIETIES**

**SEASON-LONG RECOMMENDED VARIETIES**
Attain, Big Boss, Diamond T, Double Diamond, Earlyploid, Fria, Frostproof, Grits, Nelson, Prine, RML4, TAMTBO, and Triangle T.

Note: These varieties were selected based on their recent three-year, multi-location performance. Other ryegrass varieties have also performed well in regional trials but have not been recently tested. New varieties available on the commercial market may be suitable but have not been adequately evaluated in Florida, or seed is unavailable.

*Susceptible to rust and/or gray leaf spot.

Rapido is a new variety that has very early flowering and could be considered for overseeding on bahiagrass or bermudagrass pastures (with early termination).

**Sweetclover**
Sweetclover grows on slightly drier soils than white clover. It will not tolerate flooding. Sweetclover has an earlier but shorter grazing season than white clover. Sweetclover should be reseeded each year.

**RECOMMENDED VARIETIES**
None at present.

**Triticale**
Triticale is a cross between wheat and rye. It is well adapted to the southern United States and peninsular Florida. Triticale has the forage quality of wheat and the excellent disease resistance of rye. Triticale does not respond well to close grazing and therefore is recommended for haylage or silage if grown alone. If used for grazing, consider blending with ryegrass to promote a longer growing season. Use recommended varieties because there are triticale varieties sold in the state that are not adapted to Florida growing conditions and will not perform well. TriCal 342 is an early variety, while Surge and 1134 are late.

**RECOMMENDED VARIETIES**
TriCal 342 has limited seed supply this year and TriCal 1143* is not available. TriCal Surge and Hybrid Surge may be considered for late-season forage production.

*Awnless varieties recommended for wildlife food plots.

**Vetch**
Vetch grows best on well-drained, fertile, loamy soils. Although it is well adapted, it is not considered to be highly productive in Florida.
RECOMMENDED VARIETIES
Cahaba White, Hairy, and Merit.

Note: Commercial seed production of most vetch varieties is limited. It may be necessary to special order seed. Patagonia is another variety available in the market and has performed well in some of our trials, but has not been broadly tested at this time.

Wheat
Wheat is less susceptible to freeze injury than oat, but its productivity is generally lower than that of all other small grains in Florida. The main advantage of wheat is the possibility of dual-purpose use (i.e., grazing and grain), but grain production might be reduced when grazed, and grain quality is generally lower for wheat grown in Florida. Wheat should not be planted for grazing before October 15. Only plant Hessian fly-resistant varieties for grazing.

RECOMMENDED VARIETIES
AGS 2024 (moderate tolerance to Hessian fly), AGS 3015, AGS 3022, AGS 3026, AGS 4023, AGS 4043, and Dyna-Gro Plantation.

Note: For varieties with moderate tolerance to Hessian fly, consider insecticide management on seed (neonicotinoid) and labeled pesticides during the growing season.

Important Considerations
- Planting cool-season forages on a clean-tilled seedbed results in earlier and higher total forage production compared to overseeding on grass sod. If overseeding on bahiagrass, the sod should be disked to 30% disturbance. For overseeding on bermudagrass, a pasture drill or no-till drill can be used alone. Excess warm-season forage should always be removed as hay or by grazing before planting the cool-season forage.
- Unless irrigated, success of winter pastures depends on adequate rainfall. This is especially true when overseeding.
- In central and south peninsular Florida, sod seeding (overseeding) of cool-season annuals into an established grass sod often fails because of insufficient soil moisture and warm-season grass competition. Sod seeding is generally not recommended unless irrigation is available or rainfall is adequate. An application of herbicide to induce dormancy is recommended. Consult your local UF/IFAS Extension agent for recommendations.
- Look for opportunities to plant on a clean-till seedbed (e.g., after vegetables or a row crop, after lifting sod, or in a pasture renovation program where the sod is plowed or turned under).
- In south-central Florida, small grains and ryegrass have been successfully grown on flatwoods in a pasture renovation program. Moisture is the most limiting factor, given the recommended timing of planting is generally dry. If soil moisture is available, same-day disking (turning the sod) and planting can be done. In the event that soil moisture is limited, then it may be best to turn the sod, disk in early to mid-October, and wait for adequate rainfall (generally in December) before planting.
- Winter legumes are more dependable on the heavier clay soils of northwestern Florida or on sandy soils underlain by a clay layer compared to deep upland sands or sandy flatwoods. However, white clover and ryegrass overseeded can also be grown successfully on flatwoods soils in northeast Florida and south-central Florida where the soil remains moist throughout the growing season.
- Remember to add the correct inoculant (nitrogen-fixing bacteria) to the legume seed before planting. Coated (already pre-inoculated) seed is sometimes available, but seed coatings with bacteria have a limited shelf life and may be costly compared to purchasing raw seed and inoculant separately and mixing just prior to planting. Be aware of proper storage for pre-inoculated seeds or inoculants; excess heat can kill bacteria.

Reference
Table 1. Planting dates, seeding rates, planting depths, and grazing parameters for certain cool-season forage crops.

<table>
<thead>
<tr>
<th>Seed-Propagated Crops¹</th>
<th>Planting Dates²</th>
<th>Seeding Rates (lb/A broadcast)</th>
<th>Seeding Depth (in)</th>
<th>Grazing Height (in)</th>
<th>Rest Period (days)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clover, Arrowleaf</td>
<td>Oct. 1–Nov. 15</td>
<td>8–12</td>
<td>0–½</td>
<td>8–10</td>
<td>3–5</td>
<td>10–20</td>
</tr>
<tr>
<td>Clover, Ball</td>
<td>Oct. 1–Nov. 15</td>
<td>2–3</td>
<td>0–¼</td>
<td>6–8</td>
<td>1–3</td>
<td>7–15</td>
</tr>
<tr>
<td>Clover, Subterranean</td>
<td>Oct. 1–Nov. 15</td>
<td>15–20</td>
<td>¼–½</td>
<td>6–8</td>
<td>1–3</td>
<td>7–15</td>
</tr>
<tr>
<td>Clover, White</td>
<td>Oct. 1–Nov. 15</td>
<td>3–4</td>
<td>0–¼</td>
<td>6–8</td>
<td>1–3</td>
<td>7–15</td>
</tr>
<tr>
<td>Fescue, Tall</td>
<td>Nov. 1–Dec. 15</td>
<td>20–25</td>
<td>¼–½</td>
<td>4–8</td>
<td>2–3</td>
<td>15–30</td>
</tr>
<tr>
<td>Medic</td>
<td>Oct. 1–Nov. 15</td>
<td>10–15</td>
<td>0–¼</td>
<td>6–8</td>
<td>1–3</td>
<td>7–15</td>
</tr>
<tr>
<td>Oats for forage</td>
<td>Sept. 15–Nov. 15</td>
<td>100–120</td>
<td>1–2</td>
<td>8–12</td>
<td>3–5</td>
<td>7–15</td>
</tr>
<tr>
<td>Pea, Austrian Winter</td>
<td>Oct. 1–Nov. 15</td>
<td>40–60</td>
<td>½–1</td>
<td>Poor grazing tolerance. Better suited as a hay or silage crop.</td>
<td></td>
<td></td>
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<tr>
<td>Rye for forage</td>
<td>Oct. 15–Nov. 15</td>
<td>90–120</td>
<td>1–2</td>
<td>8–12</td>
<td>3–4</td>
<td>7–15</td>
</tr>
<tr>
<td>Ryegrass, Italian (annual)</td>
<td>Oct. 1–Nov. 15</td>
<td>20–30</td>
<td>0–½</td>
<td>6–12</td>
<td>3–4</td>
<td>7–15</td>
</tr>
<tr>
<td>Turnips</td>
<td>Oct. 1–Nov. 15</td>
<td>5–6</td>
<td>¼–½</td>
<td>6–8</td>
<td>2–3</td>
<td>varies</td>
</tr>
<tr>
<td>Vetch, Hairy</td>
<td>Oct. 1–Nov. 15</td>
<td>20–30</td>
<td>1–2</td>
<td>6–8</td>
<td>3–4</td>
<td>varies</td>
</tr>
<tr>
<td>Wheat for forage</td>
<td>Oct. 15–Nov. 15</td>
<td>90–120</td>
<td>1–2</td>
<td>8–12</td>
<td>3–5</td>
<td>7–15</td>
</tr>
<tr>
<td>Triticale for silage or use in blends</td>
<td>Oct. 15–Nov. 15</td>
<td>90–120</td>
<td>1–2</td>
<td>Harvest for silage at milk or soft dough stage of maturity.</td>
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</tbody>
</table>

¹ Always check seed quality. Seed germination should be 80% or higher for best results.
² Planting date range: In general, cool-season forage crops in northern Florida can be planted in the early part of the planting date range, and in southern Florida, in the latter part of the planting date range.
Table 2. List of species and recommended cool-season forage varieties for Florida, based on three-year, multi-location trials in partnership with the University of Georgia and Auburn University.

<table>
<thead>
<tr>
<th>Species</th>
<th>Recommended Varieties for Florida¹</th>
<th>Observation²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfalfa</td>
<td>Alfagraze 600RR, Bulldog 805</td>
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<tr>
<td>Arrowleaf Clover</td>
<td>Blackhawk, Apache</td>
<td></td>
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<tr>
<td>Ball Clover</td>
<td>Don, Grazer’s Select</td>
<td></td>
</tr>
<tr>
<td>Berseem Clover</td>
<td>Bigbee, Frosty</td>
<td></td>
</tr>
<tr>
<td>Crimson Clover</td>
<td>Dixie</td>
<td></td>
</tr>
<tr>
<td>Red Clover</td>
<td>Barduro, Red Ace, Southern Belle, FL24D</td>
<td></td>
</tr>
<tr>
<td>White Clover</td>
<td>Louisiana S-1, Ocoee, Osceola, Regal Ladino, Regalgraze</td>
<td></td>
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<tr>
<td>Lupine</td>
<td>Tifblue, Frost, and Tifwhite</td>
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<tr>
<td>Medic</td>
<td>Armadillo burr and Devine little burr</td>
<td></td>
</tr>
<tr>
<td>Oat</td>
<td>Juggernaut, Horizon 306†, Horizon 578, Horizon 720*, Legend 567, PlotSpike Forage Oat, RAM LA 99016*, RAM FLLA11019-8, and TriCal Cadillac</td>
<td>†Late varieties. *More susceptible to crown rust.</td>
</tr>
<tr>
<td>Rye</td>
<td>FL401, Kelly Grazer III*, and Wrens Abruzzi*</td>
<td>*Late varieties.</td>
</tr>
<tr>
<td>Ryegrass (early-season)</td>
<td>Attain, Big Boss, Diamond T, Earlyploid, Flying A, Fria, Frostproof, Grits, Prine, Rapido, RML4, TAMTBO, and Whitehawk</td>
<td></td>
</tr>
<tr>
<td>Ryegrass (late-season)</td>
<td>Attain, Big Boss, Double Diamond, Earlyploid, Jackson*, Marshall*, Nelson, Prine, RML4, TAMTBO, Triangle T, and Ranahan</td>
<td>*Susceptible to rust and/or gray leaf spot.</td>
</tr>
<tr>
<td>Ryegrass (long-season)</td>
<td>Attain, Big Boss, Diamond T, Double Diamond, Earlyploid, Fria, Frostproof, Grits, Nelson, Prine, RM4L, TAMTBO, and Triangle T</td>
<td>*Susceptible to rust and/or gray leaf spot.</td>
</tr>
<tr>
<td>Triticale</td>
<td>TriCal 342, Surge (late variety)</td>
<td></td>
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<tr>
<td>Vetch</td>
<td>Cahaba White, Hairy, and Merit</td>
<td></td>
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<tr>
<td>Wheat</td>
<td>AGS 2024 (moderate tolerance to Hessian fly), AGS 3015, AGS 3022, AGS 3026, AGS 4023, AGS 4043, and Dyna-Gro Plantation</td>
<td>*Moderate tolerance to Hessian flies. Consider insecticide management.</td>
</tr>
</tbody>
</table>

¹Varieties selected based on their recent three-year, multi-location performance. Other varieties that have not been tested may perform well in Florida.
²See text for more information.