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Agronomy Notes

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Forage

Weed Control

Miscellaneous

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Impact of Soybean and Peanut on N Needs of Winter Forages

If no N is applied to winter forages or cover crops, forage yields can be increased by 80% by having soybeans or peanuts immediately prior to planting small grain. This may be enough for a good cover crop. However, when grazing is needed and 75 lbs/A of N are applied to the winter cover crop or grazing, a well nodulated soybean crop can increase yields of winter forage by about 20%. Most of the nitrogen is available from both peanut and soybean during the first 30-45 days and may be leached out of the root zone over the winter if a cover crop is not planted. Additional nitrogen is needed for plant growth after the first 45 days in most cases.

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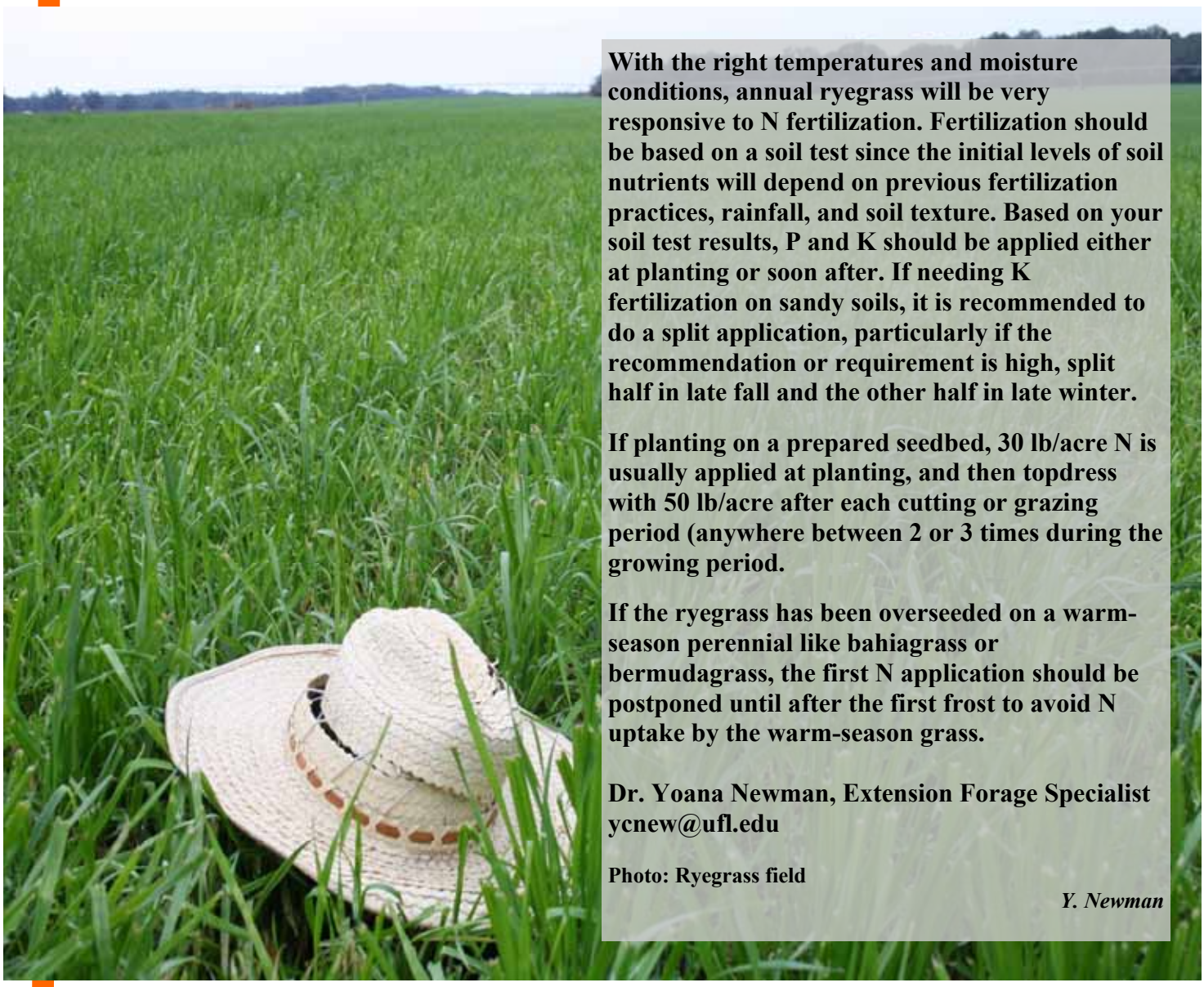
Annual Ryegrass Fertilization



With the right temperatures and moisture conditions, annual ryegrass will be very responsive to N fertilization. Fertilization should be based on a soil test since the initial levels of soil nutrients will depend on previous fertilization practices, rainfall, and soil texture. Based on your soil test results, P and K should be applied either at planting or soon after. If needing K fertilization on sandy soils, it is recommended to do a split application, particularly if the recommendation or requirement is high, split half in late fall and the other half in late winter.

If planting on a prepared seedbed, 30 lb/acre N is usually applied at planting, and then topdress with 50 lb/acre after each cutting or grazing period (anywhere between 2 or 3 times during the growing period.

If the ryegrass has been overseeded on a warm-season perennial like bahiagrass or bermudagrass, the first N application should be postponed until after the first frost to avoid N uptake by the warm-season grass.

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Photo: Ryegrass field

Y. Newman

Fall Soil Sampling

Fields should be sampled every year for nutrient levels and for detection of nematode levels in the field. November is normally a good month since crops are mostly out of the field and are easy to traverse to get samples. This will help determine what nutrients are needed and especially if fields need to be limed. Nematode levels can help determine what crops to grow the following year and if treatment is needed. Likewise, certain cover crops can increase nematode levels and knowing species in the field will help determine what cover crops to grow.

Dr. David Wright, Extension Agronomist

Fall Tillage For Small Grain

Coastal plain soils have a natural compaction layer that inhibits root growth which reduces the amount of nutrients and water available to plants. Small grain and winter grazing respond to deep tillage in much the same way that row crops do. During dry or wet periods small grain yields can be much higher due to being able to root deeper or water may drain through the soil faster allowing crops to grow better.

Since small grain for grain and grazing is planted with a drill in narrow rows, a chisel plow or similar deep tillage implement is needed to loosen the subsoil. Small grain yields may be 15-30% higher after deep tillage than without it. Likewise, forage yields may be higher by 20-30% after deep tillage. Forage yields will normally be 30% higher with some tillage after the summer crop than with no-till plantings and the forage is available for grazing 2-3 weeks earlier. Small grain can be no till drilled into previous crop residue (*see picture*.)

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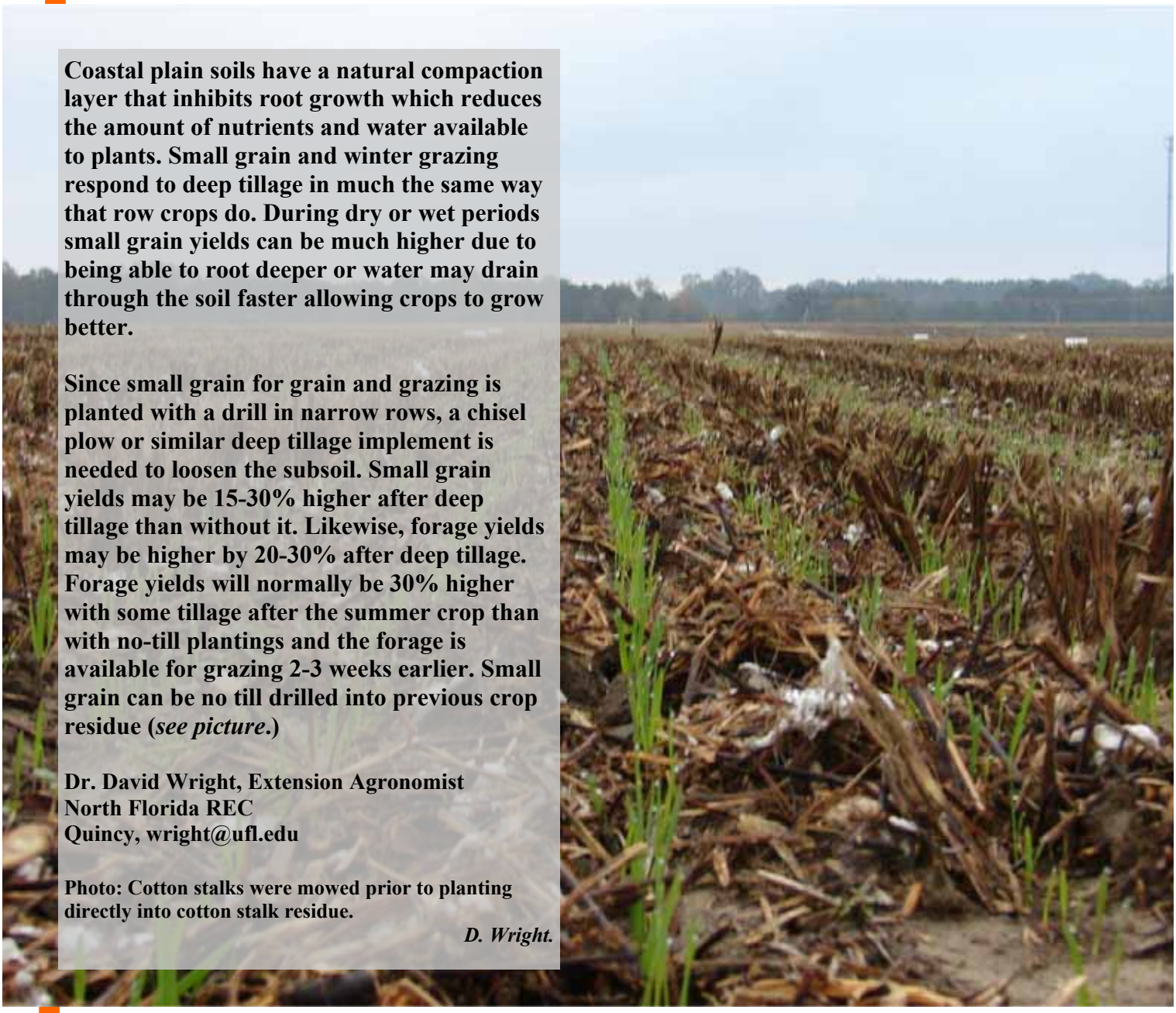

Photo: Cotton stalks were mowed prior to planting directly into cotton stalk residue.

D. Wright.

Disulfoton and Methamidophos Voluntarily Canceled

EPA has issued a final order approving the voluntary cancellations, requested by the registrants, of pesticide products containing disulfoton and methamidophos. Disulfoton and methamidophos are both used as insecticides/miticides. Uses of importance in Florida for disulfoton include control of spider mites, aphids, thrips, mealybugs, and other sucking insects in cotton, ornamentals, potatoes, and other vegetables.

Methamidophos has been used for control of chewing and sucking insects and spider mites on potatoes and cotton. The order, published in the Federal Register on September 23, 2009, cancels the last disulfoton and methamidophos products registered for use in the United States. These organophosphate insecticides are registered for use on a variety of food crop and non-food sites, including disulfoton use on residential ornamentals. EPA received no comments in response to a July 22, 2009 notice announcing the agency's receipt of the requests for voluntary cancellation.

For all methamidophos products and most disulfoton products, the cancellations are effective December 31, 2009; two disulfoton products will be canceled effective December 31, 2010. Use of the disulfoton and methamidophos products canceled by this order may continue until existing stocks are exhausted, provided that use is consistent with approved product labeling. The registrants may sell and distribute existing stocks of most disulfoton products and all methamidophos products until December 31, 2010; two disulfoton products may be sold and distributed by the registrant until June 30, 2011.

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Calendar

November 1-5	**ASA, CSSA, SSSA** annual meeting, Pittsburgh, PA.
November 7	"**Livin' the Country Life** - Land and Animal Ownership" Conference Bert Harris Agri-Civic Center, Sebring; Contact: Manatee County Extension Service Christa Kirby, 941-722-4524; Sponsor: South Florida Beef-Forage Program in UF IFAS Extension
November 9	**UF/IFAS York Distinguished Lecture**, 2:00 p.m., Gainesville UF Emerson Alumni Hall, President's Room Featuring *Congressman Adam Putnam.* Parking in O'Connell Center
November 14	**Florida 4-H Centennial Gala**, Jacksonville
November 15-17	**Energy Conference**, Orlando
December 13-16	**Conference on Grazing Lands**, Reno/Sparks, NV
February 24-26, 2010	**UF Water Institute Symposium**, Gainesville
May 3-6	**Aquatic Weed Control Short Course**, Coral Springs
May 5-7	**Florida Beef Cattle Short Course**, UF Gainesville, Hilton UF

EPA Begins New Scientific Evaluation of Atrazine

In an October 7th news release from the U.S. Environmental Protection Agency (EPA), it was announced that EPA is launching this year a comprehensive new evaluation of the pesticide atrazine to determine its effects on humans. At the end of this process, the agency will decide whether to revise its current risk assessment of the pesticide and whether new restrictions are necessary to better protect public health. One of the most widely used agricultural pesticides in the U.S., atrazine can be applied before and after planting to control broadleaf and grassy weeds; EPA will evaluate the pesticide's potential cancer and non-cancer effects on humans. Included in this new evaluation will be the most recent studies on atrazine and its potential association with birth defects, low birth weight, and premature births.

"One of Administrator Jackson's top priorities is to improve the way EPA manages and assesses the risk of chemicals, including pesticides, and as part of that effort, we are taking a hard look at the decision made by the previous administration on atrazine," said Steve Owens, assistant administrator for EPA's Office of Prevention, Pesticides and Toxic Substances. "Our examination of atrazine will be based on transparency and sound science, including independent scientific peer review, and will help determine whether a change in EPA's regulatory position on this pesticide is appropriate."

During the new evaluation, EPA will consider the potential for atrazine cancer and non-cancer effects, and will include data generated since 2003 from laboratory and population studies. To be certain that the best science possible is used in its atrazine human health risk assessment and ensure transparency, EPA will seek advice from the independent Scientific Advisory Panel (SAP) established under the Federal Insecticide, Fungicide and Rodenticide Act. EPA will engage the SAP to evaluate the human health effects of atrazine over the coming year. Below is the timeline:

November 2009	EPA will present SAP its plan for the new atrazine evaluation.
February 2010	EPA will present and seek scientific peer review of its proposed plan for incorporating population studies into the atrazine risk assessment.
April 2010	EPA will present and seek peer review of its evaluation of atrazine non-cancer effects based on animal laboratory toxicology studies, selection of safety factors in the risk assessment, and the sampling design currently used to monitor drinking water in community water systems.
September 2010	EPA will present and seek peer review of its evaluation of atrazine cancer and non-cancer effects based on animal toxicology studies and epidemiology studies. This review is intended to include the most recent results from the National Cancer Institute's Agricultural Health Study, anticipated for publication in 2010.

At the conclusion of this process, EPA will ask the SAP to review atrazine's potential effects on amphibians and aquatic ecosystems. The SAP meetings will be open to the public.

In addition to the scientific review of the effects of atrazine, EPA plans to meet with interested groups to explore better ways to inform the public more quickly about results of atrazine drinking water monitoring.

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Candle Bush: Another Weed to Watch in Pastures, Natural Areas, and Roadsides

Candle bush (*Senna alata*), also named candlestick, Emperor's candlestick, Christmas candle, popcorn senna and ringworm shrub, is a shrub or small tree, but often grows as an annual in cooler climates (*see photo*.) In tropical climates, candle bush can grow up to 30 ft tall and 15 ft wide. In climates that support only annual growth of this plant, reports of up to 10 ft tall and 4 ft wide are common *(see photo on left.)*

Candle bush plants are usually highly branched and the degree of branching is similar to that of Brazilian peppertree. Leaves are pinnate with 7 to 14 pairs of leaflets. Individual leaflets are rounded at the apex, up to 2.5 inches long, and are typically larger near the leaf tip. Flowers are yellow, arranged closely on an upright spike somewhat resembling a candle. Seed pods are thick, straight, narrow, and 4-angled and split open to reveal approximately 60 tan to brown flattened seeds at maturity. Late in the season, the inflorescence will have dry, brown pods at the bottom; green, ripening pods above, that; open flowers, followed by unopened flowers at the top.

Candle bush is found in many habitats, but prefers high water tables and is fairly drought tolerant once established. It prefers open areas and sunlight, but can survive in partial shade. It often forms thickets where it has escaped cultivation. In Hawaii, it has been observed to form dense stands in pastures. In Australia, candle bush is found along creeks and drainage canals, and occasionally on disturbed and overgrazed areas. It is commonly found along roadsides, old abandoned field, and other weedy localities in Guam.

According to the Atlas of Florida Vascular Plants, candle bush has been recorded in 11 Florida counties, with the northern most being Orange and Brevard counties. In addition to Florida, candle bush is found in Alabama, Mississippi, Louisiana, Texas, and Hawaii. Recently, we have observed candle bush plants growing in open pastures in Hardee, Manatee, and Polk Counties.

Candle bush is a tropical plant, therefore, probably only overwinters well in extreme south Florida and along the coasts. Although the top growth of the plant is killed by frost, regrowth from the root stock is quite common throughout Florida. Considering Florida's climate it is likely that this plant will continue to persist and may become problematic in various habitats.

Control of candle bush does not appear to be difficult. Research in Hawaii has determined that it is extremely sensitive to triclopyr (Remedy Ultra, etc.) and 2,4-D. Considering that candle bush is a member of the legume family, aminopyralid (Milestone/Grazonnext) may also provide good control. Mechanical controls are usually ineffective due to regrowth from the root system.

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Winter Rye and its Weed-killing Properties

Rye (*Secale cereale*), is a winter grain not to be confused with annual Ryegrass (*Lolium multiflorum*). Rye is one of the small grains together with oats, wheat, barley, and triticale. This grass is popular in Florida because of its multipurpose use. It has an extensive and heavy root system, and the ability to grow in sandy and low fertility soils. It is also the winter hardiest of all small grains; it will grow at lower temperatures where other winter grains usually will not. Rye plants are often used as ground cover and to reduce erosion. Of particular interest, is the weed-killing capability of this crop. Rye suppresses weeds without herbicides, making it a common cover crop on organic farms.

Rye inflorescence.

Photo: Y. Newman

Depending on where it is planted in the state, it will provide grazing from late November to April.

Rye field.

Photo: Y. Newman

Scientists with the Agricultural Research Service (ARS), John Teasdale and Cliff Rice and their research team, are trying to understand why Rye works as a cover crop. The studies are the first attempts to measure organic compounds known as 'benzoxazinoids' released from rye, and their impacts as weed suppressors. The goal of these researchers is to continue the experiments until more light is shed on the compounds involved and their relation to soil chemistry properties.

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