UF UNIVERSITY of FLORIDA
IFAS Extension

Agronomy Notes

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Features . . .

Forage Potential of Edible Peanut

Many farmers are looking into annual peanut as a hay crop. Dr. Dan Gorbet from University of Florida researched edible peanut for forage production in a 5-yr study. Different cultivars of edible peanut that included 'Southern Runner' with late leaf spot resistance, were planted in May or early June without irrigation. Yields averaged over different cultivars and 5 years were 4200 lb/acre when cut only once, (at 135-140 d, just prior to digging), and they were 5800 lb/acre when cut twice (at 80 d after planting and again prior to digging). The nutritive value of the forage was higher at each cut in the two harvest system with crude protein ranging from 14 to 19.6%, and digestibility ranging from 61 to 72%. When cut only once, crude protein was lower than when cut twice and ranged from 12.5 to 14.8%. Similarly, digestibility ranged from 55.7 to 61.3%. This study shows that edible peanut can be used for forage production with yields close to 6500 lb/acre which compares satisfactorily to perennial peanut. One point to keep in mind is that growing edible peanut might have all the expenses associated with a row crop, but if in emergency situation it will provide quick forage.

Peanut

Photo: National Peanut Board

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Implications of Increased Soybean Acreage

Increased soybean acreage means better scouting for rust- With soybean prices at historic highs the acreage is expected to increase. With 3 years of intensive research at the NFREC in Quincy, we know that when rust hits during the early bean set period, yields can be reduced by a third. Earlier infections could mean even more losses. Some of our cooperative research at NFREC has shown that a 10% leaf infection by rust can reduce photosynthesis by 75%. Therefore, soybeans

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Mexican Prickly Poppy Control

Mexican prickly poppy (*Argemone mexicana*), also known as goatweed, Mexican thistle, prickly poppy, and yellow thistle, is a member of the poppy family. It is an annual or biennial plant that is found east of the Rocky Mountains, Hawaii, and Puerto Rico. In Florida, it is typically recognized as 'some type of thistle' until it flowers.

Soft Rush (Bull Rush)

Photo: Brent Sellers

Most believe that Mexican prickly poppy is a thistle when plants are young due to the toothed and prickly leaf margins, giving it a thistle-like appearance (See front page photo). However, one key difference is that Mexican prickly poppy exudes a yellowish milky sap when stems are broken, while thistles do not. Another difference is in the flower where Mexican prickly poppy has relatively large yellow flower (Figure 3) with 4 to 6 petals, which is quite different from the flower cluster that is common with thistles. Like thistles, Mexican prickly poppy reproduces only through seed production. Seeds are enclosed in a relatively large spiny capsule (Figure 4). Approximately 400 seeds can be produced in one capsule.

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Calendar Dates

May 12-14	**Southern Pastures and Forage Crops Improvement Conference,** Knoxville, TN
June 1-4	**Florida State Horticultural Society and Crop Science Society of Florida Meeting**, Marriott North, Ft. Lauderdale, FL
July 13-17	**Caribbean Food Crops Society Meeting** Miami, FL ~ Hosted by UF/IFAS
July 13-15	**Southern Peanut Growers Conference** Edgewater Beach Resort, Panama City Beach, FL

Mexican Prickly Poppy Control (cont…)

Key characteristics for recognition:

Stem: Cylindrical, whitish in color and with scattered prickles. When broken, a yellowish milky sap can be readily observed.

Leaves: Leaves can be up to 8 inches long, and are typically silvery-green with white veins and deep regular lobes. the upper surface of the leaf is smooth, while the underside has a few prickles along the midrib. The edges of the leaf are often lined with many prickles.

Flowers: Flowers are yellow and approximately 2.5 inches in diameter.

Seed: Seeds are produced inside a prickly capsule measuring at 1.5 inches in length. Approximately 3 to 6 openings in the capsule allow the seeds to disperse, but many of the seeds can remain inside the capsule for weeks until wind or animals shake the plant. Up to 400 seeds can be enclosed by a single capsule and the seeds may stay dormant in the soil for many years.

Flowers of Mexican prickly poppy are approximately 2.5 inches in diameter and have 4 to 6 yellow petals

Photo: Brent Sellers

Mexican prickly poppy is poisonous to livestock. However, there are very few cases of poisoning related to this plant because it is not readily eaten. However, plants in hay have been a source of poisoning. Seeds are often considered the most toxic, but the entire plant contains toxic properties as well.

Although this weed is common throughout all Florida, it is typically not a wide-spread problem weed. But for those who wish to control it, 2,4-D or WeedMaster (or other products containing 2,4-D + dicamba) are the most effective and economical herbicides for control. The application rate for each herbicide is 3 pt/acre for broadcast applications. If spot spraying is necessary, a 3% solution of either 2,4-D or 2,4-D + dicamba in water is appropriate. Remember, it is best to treat a younger plant, especially before seed set occurs to ensure that seeds are not added to the soil seedbank.

Seed capsules of Mexican prickly poppy are approximately 1.5 inches long with numerous spiny prickles.

Photo: Brent Sellers

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pH and Pesticide Stability – Test Your Mix

This past year, several extension agents contacted the Pesticide Information Office to inquire about pesticide instability when mixed with alkaline water. Several relevant factors concerning the phenomenon have been known for a number of years:

- ⇒ It is known that, in general, there are problems of chemical breakdown with certain families of pesticides – the carbamate and organophosphate insecticides are most notorious.
- ⇒ When mix water has pH values of 7.5 and higher, there should be concerns particularly if using to dilute pesticides known to undergo this problem.
- ⇒ Leaving a mixture in a tank for an extended period of time, or even overnight and less, for some pesticides, can render them ineffective.
- ⇒ A water pH of 5.5 to 6.5 is ideal for most pesticides.
- ⇒ Acidifying agents are commercially-available that will acidify the pH of the spray solution, if needed.

What, apparently, is not widely known is how common the occurrence of this being a problem with pesticide application. We know that we have alkaline water in the state as the majority of groundwater withdrawn is from the Floridian Aquifer (limestone-based). In presenting this information to several large commercial applicator audiences this past fall, an informal survey showed that the vast majority of those applicators had never tested their water pH. My first and obvious thought was that they could have potential problems that they had never taken into account. The few applicators who responded positively mentioned that their water tests showed an approximate pH value of 8. Table 1 shows some examples of pesticides that can undergo alkaline hydrolysis. The half-life is the time necessary to lose 50% of its activity

Table 1. Half-life (50% hydrolysis time) of selected pesticides at varying pH values.

Active ingredient	**pH 6**	**pH 7**	**pH 8**	**pH 9**
Azinphos-methyl		10 days		12 hours
Captan		8 hours	10 minutes	2 minutes
Carbaryl	100-150 days	24-30 days	2-3 days	1-3 days
Carbofuran	200 days	40 days	5 days	3 days
Chlorpyrifos		35 days	22 days	
Diazinon		70 days		29 days
Dimethoate	12 hours			1 hour
Disulfoton	32 hours			7 hours
Malathion	8 days	3 days	19 hours	
Methomyl	54 weeks	38 weeks	20 weeks	
Phosmet		1 day	4 hours (pH 8.3)	1 minute (pH 10)
Propargite	331 days			1 day
Trichlorfon	4 days	6 hours	1 hour	

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Pre-emergence use of Prowl in corn

Corn production is quickly returning to Florida due to the currently high commodity prices. The vast majority will be Roundup Ready, but we commonly advise corn producers to use a more diverse weed management program as a way to reduce risk. One of the most effective and inexpensive programs is Prowl + atrazine followed by glyphosate. Prowl + atrazine will provide broadspectrum residual control of grass and broadleaf weeds and allow greater flexibility with the glyphosate applications.

However, many corn producers hesitate to use Prowl because of potential injury. Prowl can cause moderate to severe root-pruning in corn if the applications are not made correctly. Therefore, the following conditions should be met to maximize crop safety. 1. Corn should be planted approximately 1.5" deep to ensure the seed is well below the soil surface. 2. Do not spray Prowl until the corn has started to emerge. Applying Prowl too early can greatly increase the likelihood of injury. 3. Don't apply Prowl until after a rainfall or irrigation event. Even if the corn is emerged, if the furrow has not been settled with rainfall, corn injury is possible.

A Prowl + atrazine combination is a highly effective herbicide combination. If used properly, these herbicides will control a vast number of weeds and provide weed-free corn for several weeks.

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Choosing crop rotations when all crop prices are high

When making the decision on what crop to grow on your farm for 2008, many factors have to be considered in addition to price, and that includes: harvesting and handling facilities, rotation schemes for future crops, economic risks from inputs, drought tolerance of crops if irrigation is not available, and how it fits with other crops planned in terms of time and labor for planting, and harvest and management throughout the season. Corn usually has to be taken out with high moisture and should be dried down for top yields and quality. Soybeans, corn and wheat require storage which has decreased since the 1980's and requires a grain combine which few have been bought since the late 1970's. All of these factors are important and can make a difference in long term viability of the farm.

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Water Tests for pH

A water test is the surest means of determining if a problem exists. The IFAS Extension Soil Testing Laboratory in Gainesville offers a water test to the public for $10.00 per sample. The form with instructions is available through all county Extension offices or can be printed directly from the ESTL website (http://soilslab.ifas.ufl.edu). A less reliable, but fast, way to determine the pH level of water is to test it with test paper. Paper test strips (Figure 1) are the least expensive; however, they can vary by as much as 2 pH points. A pH meter (Figure 2) will also provide fast results, but more reliable and consistent readings. Meters are available commercially for as little as $50 that will measure pH within 0.2 points accuracy. More expensive models have greater precision and may have the ability to conduct additional measurements such as electrical conductivity.

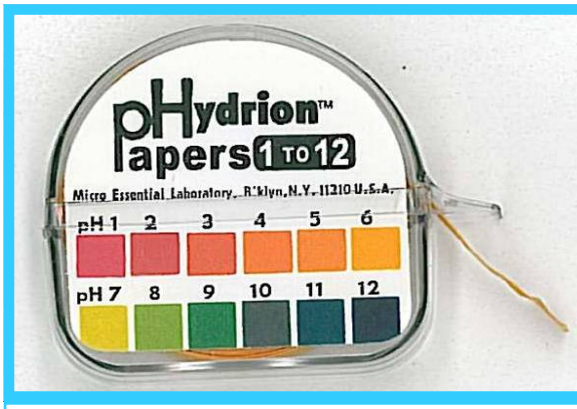

Fig. 1. Paper test strips
Photo: Fred Fishel

Fig.2. pH meter
Photo: Fred Fishel

Summary

Determining the pH of the spray mix water and adding an acidifier, if necessary, is inexpensive compared with the cost of losing a pesticide's effectiveness. There are water sources in Florida that are alkaline by nature, and the addition of an acidifying agent to the spray mix is an easy and economical way to guarantee maximum results from your pesticide applications. Label statements similar to this (Photo below) will alert the user of potential problems. More details on this subject are presented in the following EDIS Document: Water pH and the Effectiveness of Pesticides http://edis.ifas.ufl.edu/PI193#TABLE_1.

USE PRECAUTIONS

Read all precautions and directions before using. Apply this product only as specified on this label.
Imidan 70-W is compatible with most commonly used insecticides and fungicides, but is incompatible with alkaline materials such as spray lime, lime sulfur, and Bordeaux mixtures. These materials will reduce the insecticidal activity of Imidan 70-W.
Insecticidal activity may also be reduced when the spray solution has a pH of 6 or higher. The pH of the spray solution must be corrected by the addition of a suitable buffering or acidifying agent for optimum insecticidal activity.

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Warm Winter and your Florida Winter Forages

Stunted rye planting in north-central Florida.

Photo: Yoana Newman

This was not a good season for winter forages in general. This year again the culprit is weather. Many calls and reports this winter have been associated with stunning of winter crops (rye, ryegrass, and clovers for those that planted them). We did not observed as many fungal diseases as last year in winter forage grasses but there was a stunning associated with most of them.

At one location near Gainesville, stunting of red and crimson clover has been correlated with sting nematodes. Sting nematodes are ectoparasitic, meaning they live in the soil and feed on growing plant root tips. Previous research with the clovers has focused on root-knot nematodes and new varieties from Florida have resistance to these pests.

Clovers with sting nematode infestation—associated with warm winter in FL.

Photo: Ken Quesenberry

Warmer soil temperatures favor nematode activity, generally speaking. With the high temperatures, these cool-season plants find themselves at the mercy of many pests that are seizing the opportunity brought by weather related stress to invade.

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Keeping Connected

For a listing of our site on ***Insects, Mites*** and other topics:
http://pests.ifas.ufl.edu/

UF/IFAS
Entomology and Nematology
newsletter available at
http://entnews.ifas.ufl.edu/

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should be scouted when they start blooming and continue into the late pod fill stage. If the disease is detected, it should be sprayed with a fungicide. Florida will have sentinel plots across Florida again in 2008 and the information will be posted on the http://www.sbrusa.net website. The soybean rust pathogen attacks several other legumes in North America but is prevalent on kudzu throughout Florida. It has been detected every month of 2008 in sites in North Florida where rains and mild temperatures have kept kudzu actively growing. Leaves of kudzu have shown that rust spores are still being produced. Wright and Marois

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Early Planted Corn and Pest Risks

If corn is planted into cover crops, cover crops should be killed at least 2-3 weeks before planting or an in-furrow insecticide should be used for control of southern corn root worm, cutworms, etc. These insects will stay in the soil for a couple of weeks as the cover crop is dying and then will go to the newly emerged corn for feeding as soon as it has germinated. Early planted corn has a better chance of avoiding leaf and whorl feeding fall armyworm as well as damaging disease epidemics during its growth period. Planting in early March often results in high yield and quality. Corn is not very susceptible to frost since the growing point remains under the soil surface until corn reaches about 12" high. The vegetative stage of growth can be slow from early planting but still fares better in most years than when corn is planted in late March and April. Stink bug should be controlled when corn starts to silk and tassel because they will cause considerable damage and may result in high levels of aflatoxin making it unsuitable for sale for livestock feed or in ethanol production. The problem is that the aflatoxin would stay with the dried distillers grain which is used for livestock feed. Wheat and other small grain will be maturing when corn starts silking which is attractive to stinkbugs. Very little scouting is done on corn at this time but it will be necessary to reduce aflatoxin levels in corn from Florida if it is to go into the ethanol trade.

Corn leaf and stinkbug eggs.
Photo: David Wright

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Timing of Forage Fertilization

The criteria for fertilization of warm-season forage species is a soil temperature above 70 °F or night temperatures that are consistently 60-65 °F. In general, day time soil temperatures will be slightly lower and will fluctuate less than air temperatures. Soil temperature is the target but it is easier to monitor air temperature readings from night news updates.

The time to fertilize warm-season grasses is when the plant roots are actively growing and able to uptake the fertilizer (soil T° above 70°F). With the varying weather patterns is better to target the night air temperature occurring in a consistent manner for approximately 2 weeks. To recommend a 'date' could be misleading because of the change we are observing in weather patterns, and it could be an earlier or later than usual 'warm year'; in past years this date would have been mid May. If you fertilize your forage plants too early you are creating a cool-season weed problem because you will be feeding cool-season weeds and later creating competition for nutrients. Optimum growth for warm-season plants, in general, occurs at air temperatures in the mid 80s up to 100-104°F.

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