

Crop Talk

A Newsletter For The Clients Of Agri-Technologies, Inc.

Are Biofuels in your “Farming Future”

W. Scott Weathington

It is amazing to listen to all the talk about biofuels. Some growers are using it, some are making it; others are growing it. Numerous projects exist all over the country and every project is convinced that it is “the one”.

First some facts:

1. The Ethanol business is tremendously larger than biodiesel.
2. Biodiesel is relatively easy to make but in reality is just soy oil mixed with diesel.
3. Ethanol plants require large investments in the neighborhood of \$100 million for a single plant.



Switchgrass

Ethanol is made primarily from corn because it is easy and readily available. Most people agree that corn is not the long term answer. Sugar is much more efficient than corn and more profitable and easier as it eliminates at least two steps in the process. Most people agree that cellulosic ethanol – the production of ethanol using biomass like switchgrass or corn stover or even wood chips is the way to go but it takes large volumes of materials to get a little ethanol and requires enzymes – kinda like a cow converts hay to milk—to make it work. However, enzymes are expensive and to date nobody has a real good one yet. Nevertheless, there is a federal mandate that says we have to produce 36 billion gallons of ethanol by 2015 and they want a good portion to come from something other than corn.

In the meantime, there are people building ethanol plants and other people closing them. Current ethanol plants are producing approx. 7 billion gallons per year and the ones being built

should add another 5 billion gallons per year and the ones on the drawing board (if they are built) will produce another 9 billion....therefore I expect we may have a total of approximately 21 billion of the needed 36 billion required by the government mandate of 2012.

Environmentalists say the land use for biofuels cancels out the benefit of their use and actually increases greenhouse gases more than just burning fossil fuels. One recent study published in the Journal of Science claimed it would take the planet 93 years to catch up to the carbon dioxide produced by adding acres of corn to meet the government mandate. Some of the experts claim that is is practical to make ethanol with \$5.00 corn if oil is higher than \$80.00/barrel.

I guess some people will keep building plants, and others will keep closing plants, while most of us wonder why, while we wait for the technological breakthrough to produce it for less.



Ethanol Plant

Honey bees play a critical role in fruit and vegetable production, as inadequate pollination lead to lower yields and reduced quality. Despite holding such an important place in production, bee populations are in crisis once again. This is currently called Colony Collapse Disorder. CCD is distinguished by a complete absence of adult bees in the colonies with little to no dead bodies around hives; presence of capped brood; presence of food stores; and not being robbed by other colonies or attacked by hive pests. The cause or causes of the syndrome are not yet well understood. Here are some of the ideas that have been offered:



COLONY COLLAPSE DISORDER

Blythe Evans

- One of the patterns reported by the Colony Collapse Disorder Working Group was that all producers noted a period of “extraordinary stress” affecting the colonies in question prior to their die-off, most commonly involving poor nutrition and/or drought. This is the only factor that all of the cases of CCD had in common in this report.

- All colonies were found to be infected with many pathogens, but only the Israel acute paralysis virus (IAPV) showed a significant association with CCD: the virus was found in 25 of the 30 tested CCD colonies, and only in one of the 21 tested non-CCD colonies. They note that this may not mean that IAPV causes CCD but that it occurs alongside it. The IAPV causes paralysis in bees which then die outside of the hive. It can be transmitted by the mite *Varroa destructor*.

- Pesticides have been targeted as a possible cause. But there are many factors that make this a difficult area to test. First there is the variety of pesticides and mixes of pesticides and many commercial beekeepers transport hives over large geographic distances over the course of a season, potentially exposing the colonies to different pesticides at each location. Also, bees store pollen and honey which is used at a later date, which means the effects might not show up at the time of initial exposure.

- Most beekeepers affected by CCD said they used antibiotics and miticides in their colonies, but the variety of choices beekeepers have to choose from makes it unrealistic that one chemical is to blame.

- Potential effects on honey bees of gathering pollen and nectar from genetically modified crops that produce *Bacillus thuringiensis* (Bt) toxin have been investigated, and there is little evidence that this is the culprit. Corn is not a preferred plant for honey bees, although beekeepers who keep bees near corn fields state that corn is an excellent source of pollen when in tassel. Cotton is highly subject to bee visitation for nectar (pollen is only consumed if there is no other pollen available), but there is no credible evidence of toxicity of GM cotton, other than that from insecticides used during bloom.

- Researchers are concerned that trucking colonies around the country to pollinate crops, where they intermingle with other bees from all over, helps spread viruses and mites among colonies. Additionally, such continuous movement might be considered a strain and disruption for the entire hive, causing it to be less resistant to disorders.

- And everyone has heard about the study that looked at the effects of radio frequency on honey bees and suggested that when bee hives have cordless phone base stations embedded in them, the close-range electromagnetic field may reduce the ability of bees to return to their hive; they also noticed a slight reduction in honeycomb weight in treated colonies. This led to a scare about cell phones being the reason for CCD (which was debunked).

- No “endangerment” would be complete without blaming climate change, in which the earth as a whole is warming but regional and local temperatures may drop much lower or rise higher than normal. Erratic weather patterns caused by global warming could play havoc with bees’ sensitive cycles. In California, an unusually dry and warm winter prevented the flowering of many plants, in which bees find their required mix of pollens, so the bees were unable to get the nutrition that they required, further stressing their immune systems.

Stink Bug Pressure On The Rise For Cotton Producers

Ashley McLamb

Historically, stink bugs were not considered a significant pest of southeast cotton because they were controlled coincidentally by the large number of insecticide treatments applied to control boll weevils, bollworm/budworm and other pests. Stink bugs are now a major concern for cotton growers in the southeast. Pressure has steadily increased in recent years and many cotton growers have questioned why? Listed below are a few contributing factors:

-The introduction of Bollgard I, Bollgard II and Widestrike cotton varieties:

The arrival of these new varieties has given growers increased worm protection across many cotton acres. In its first nine years (1996 to 2004), Bollgard cotton acreage received an average of .95 late season treatments in North Carolina, varying from none to a high of about two applications. Most of these sprays have been targeted for bollworms and have not effectively controlled stink bugs. If you are able to piggy back an insecticide that is targeting stink bugs with your worm spray this will greatly reduce your damage if treated at the right time.

-Environmental influences that favor stinkbug development:

Typically stink bugs over winter in the adult stage beneath leaf litter, deciduous cover, soybean stubble, winter vegetables and anything that offers protection from environmental extremes. The past few years the southeast has experienced fairly mild winters. The warmer temperatures through out the winter months have given these stinkbugs a better environment to survive and over winter. It is likely the warmer temperatures will make these pests more active and give them a better chance to reproduce. Normally, as the winter progresses these stinkbugs will move to more attractive crops such as wheat. As wheat nears maturity stink bugs will move on to other host crops, such as corn, soybeans and cotton.

-Increased grain production:

Grain production increased in year 2007 and will also increase in year 2008 due to a favorable market. Corn, soybeans and wheat are suitable host crops that harbor high numbers of stink bugs.

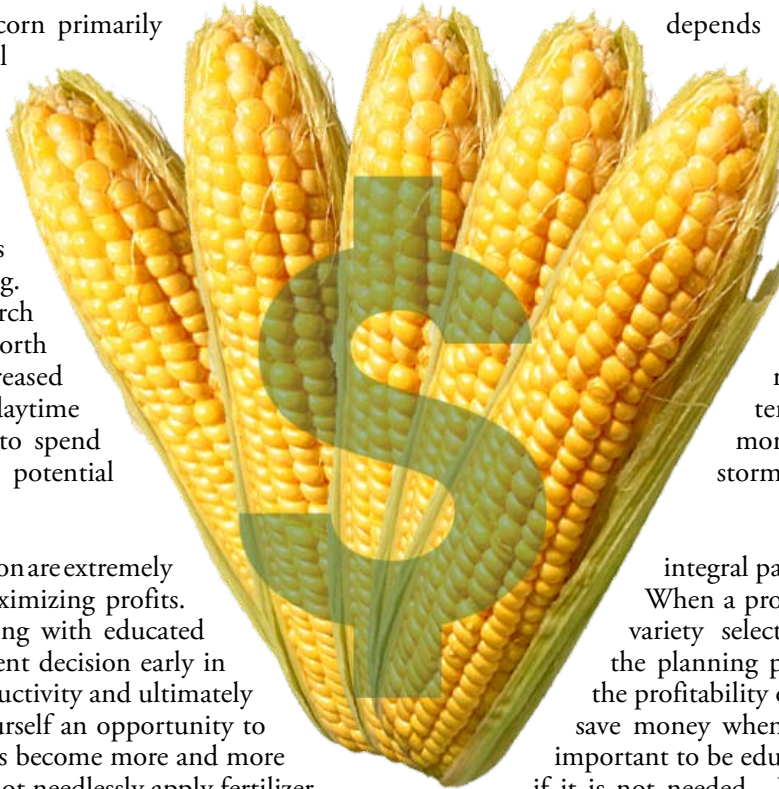
The stinkbug pressure has definitely increased over the past few years and will probably continue that trend for years to come. The scenario's above are only a few factors contributing to this trend. Effective control of stink bugs depends on the application of foliar insecticide sprays that are applied whenever infestation levels exceed the economic threshold. Although there are some differences between the brown, green and southern green stink bugs in susceptibility to certain insecticides, stink bugs are relatively easy to control with foliar sprays. Scouting for stink bugs and worms will help you make the right decision when choosing your insecticides. This will greatly increase your chances in controlling this pest.

Manage For Profitability In Corn

DeLeon Pope

Corn production in the South provides a potentially profitable addition to traditional crops such as cotton, peanuts, etc. Corn is also an excellent rotational crop that can be managed for maximum yields and profits where irrigation is available or the weather permits. Production costs will once again be dramatically higher this year and test the patience and managerial skills of the producers throughout the Carolinas. Often times there is a fine line between intensively managing a crop for high yields and managing that crop for optimal returns. As we move forward into the next decade I firmly believe that farmers will face economic challenges and hardships like no other generation has ever seen. In comparison, the late seventies and early eighties saw inflation climb to all time highs and many smaller family-owned farms faltered as the economy took a hit. Many factors will influence the growers' net return but none as much as increased fuel, seed, and fertilizer prices.

Development and growth of corn primarily length. This means that the soil temperature of 55 degrees F consecutive days, is more calendar. The other factor be frost. Although in most tolerate to a "light dusting" as the planting window begins the time and global warming. begin by the third week in March late April for most areas in North planting early include increased probability of rainfall, lower daytime which may allow the grower to spend fields as well as help bypass potential hurricane season.



depends on temperature and not day temperature, ideally a morning at a two-inch depth for three important than the date on a not yet mentioned would cases corn seems to somewhat producers need to tread softly to widen with changing of Generally planting should and culminate sometime in Carolina. The advantages of moisture retention, higher temperatures, and early harvest more time in the cotton and peanut storm damage if we have an active

Soil testing and proper fertilization are extremely to achieve high yields and maximizing profits. crop year, soil stewardship along with educated considered. A poor management decision early in long-lasting effects on the productivity and ultimately to test your soil is to allow yourself an opportunity to As inputs continue to rise it has become more and more within the soil so that you do not needlessly apply fertilizer through the lack of nutrient application, but I am suggesting that apply levels that are sufficient to achieve the yield goals you have predetermined but manage those levels in such a way that you do not impact your net return in a negative manner. Another way to potentially achieve maximum yields is plant analysis. Consider taking plant tissue samples from weaker areas or farms or possibly all farms to ensure that all the plants needs are being met throughout the duration of the season.

integral parts of the puzzle when attempting When a producer begins to plan for the next variety selection should be the first things the planning process can and usually will have the profitability of that operation. Another reason save money when applying nutrients to that soil. important to be educated in crop needs and the levels if it is not needed. I am not advocating soil mining in order to trim costs and minimize risks, it is advisable to apply levels that are sufficient to achieve the yield goals you have predetermined but manage those levels in such a way that you do not impact your net return in a negative manner. Another way to potentially achieve maximum yields is plant analysis. Consider taking plant tissue samples from weaker areas or farms or possibly all farms to ensure that all the plants needs are being met throughout the duration of the season.

Other than fertility and variety selection, the biggest yield robbing mechanism would have to be weed competition. Corn is probably one of the most sensitive crops grown in the South in respect to weed competition. Glyphosate tolerant weeds continue to offer many challenges for growers and researchers alike as they struggle to find new alternatives to combat this ever-increasing problem. The use of preplant herbicides and the ability of the producer to recognize a problem before it reaches critical mass is imperative in the fight to keep the spread of this epidemic contained. Crop rotation is going to play a big role in managing this problem. Corn offers more choices than some crops when considering such problem weeds as palmer amaranth, commonly referred to as pigweed.

Many challenges lie ahead for producers as we march forward into the new millenium. As a farmer, many of you have proven that you are individuals that can wear many hats and multi-task with the best Wall Street has to offer. Make no mistake, in order to survive in a business as competitive as agriculture people either adapt or get left behind. The next twelve to twenty-four months should be very exciting and ultimately challenging as we continue to ride this wave of economic futility and inflationary restraints. I have always heard that history repeats itself. With that being stated, it seems almost a fore gone conclusion that we will see some type of market correction within the coming months or years. If producers can weather the storm, each one will have the opportunity to rise up and say, "I am proud to be an American and I am an integral part of this country's economic livelihood as well as one of its unsung heroes. I work sun up to sun down to support my family, only to be mocked by people who do not understand the intricacies of agricultural. The same people that mock me are the ones that give no thought as to where the products they use and eat come from. I am a farmer, a pioneer; some may even consider me a forward thinker, who never gives up in the face of adversity. I have faced many challenges and never backed down...this time will be no different. I have seen good times and I have witnessed bad times. I am stronger because of the obstacles I have had to overcome and I am here to stay. I am the American Farmer

Resistant Pigweed

David Langston

Before this season started there was a lot of talk about resistant pigweed. There was enough resistant pigweed showing up in the 2006 crop to get growers thinking about using residual herbicides pre-emergence again like was done before Roundup cotton came out. This year has been very dry so far in different areas so I was going to discuss how the different pre-emergence chemicals have worked in dry conditions and also in some areas that had some rain.

Prowl alone behind the planter did not work very well in the areas that did not get rain to make it work. Prowl that did get rain held the pigweed back longer than I have seen those same fields in the past without Prowl. By the time we sprayed the 2nd Roundup at 4th leaf stage all the pigweed had come through the Prowl. At that time you have to go Roundup and Staple instead of Roundup and Dual because if the pigweed are resistant to Roundup the Staple is the only thing that will get them at that time. Knowing that some pigweed has shown resistance to Roundup and Staple, I do not think that Prowl alone is a good choice where you think you might have a resistance problem.

Prowl and Reflex has seemed to work much better where we have had rain to get it working before weeds have come up. In areas though that did not get rain there has been some pigweed that came up before the Reflex could work. This is only a problem if you have resistant pigweed because roundup should kill all non resistant pigweed. Direx behind the planter mixed with either Prowl or Reflex is also a good option. I have not seen a lot this year to judge.

What has seemed to work the best this year that I have seen is when a no-till or striptill farmer is burning down 3 to 4 weeks before planting and is adding Valor in with burndown. 1 oz Valor gives 3 to 4 weeks control and 2 oz Valor gives up to 6 weeks of control. You have to have rain after this is applied before you plant or you could have some injury. If Valor is in the burndown then behind the planter you apply Reflex, this has shown very good results. If it does not rain on the Reflex to get it to work the Valor is still holding the pigweed back to give more time to get a rain on the Reflex.

I will rank what I think is working the best where there is resistant pigweed. If there is not resistance then some of this would seem to be a waste of money but it could help you from getting resistance on your farm in the future.

- 1st Valor in burndown then Reflex behind planter. The Reflex could be mixed with Prowl or Direx if you choose. This is a very good program.
- 2nd Any combination that has Reflex behind planters. Adding Prowl or Direx with Reflex. This is a good program.
- 3rd Reflex alone. This is an ok program.
- 4th Prowl alone
Direx alone
This is not good enough if you have resistant pigweed.

Note: Any pigweed that escapes the residual herbicides and does not die from the 1st Roundup spray you would have to use Roundup and Staple on the 2nd trip and hope it works.

Note: There are all different kinds of combinations. Staple and Direx behind the plant is good but you need to try to save the Staple for an overtop spray after cotton is up if Pigweed gets through any residual combinations.

Note: If you have any weeds up when you are planting you need to add Gramoxone in with residual herbicide behind the planter. I have had growers add in Gramoxone even when they didn't see any weeds and for some reason the crop would stay cleaner longer. The Gramoxone must be killing very small weed seeds that you cannot see.

In conclusion, a lot of farms might not need any residual herbicides as of now and some farms really do need some. The main reason to put residual out on farms that you do not think you have a problem is to try to help that farm from becoming a problem. This could become a major problem without some preventative measures.

Fungicide Application In Field Corn

Ralph Johnson

Over the past few years, there have been many discussions among growers about the feasibility and profitability of fungicides in corn production. Most corn growers are aware that several fungicides are labeled for control of foliar diseases in corn. Considerable interest has risen among growers about fungicide applications for corn due to high market prices of corn, marketing of fungicide products, and concern over increased disease risk from planting corn after corn. Also another factor to take into consideration is the plant health benefit of fungicide application in corn. Although some of these factors provide good reasons for applying corn fungicides, additional factors should be taken into concern such as the previous crop history, the disease susceptibility of the hybrid, weather conditions, and crop scouting information while deliberating over the decision.

Corn scouting information and observations are vital and very important tools which can be used to help make fungicide decisions. Many foliar diseases start on the bottom leaves of the corn plant and progressively move up the plant depending on environmental conditions. Scouting the field is important since this will give a good indication of disease pressure present in that field. Fields should be scouted regularly to assess disease development on the lower leaves up to and including the ear leaf. In turn, scouting will determine fungicide application timing with the goal of the fungicide application being to prevent disease from spreading to the ear leaf and the leaves above that contribute 75 to 90 percent of the carbohydrates for grain fill. However, if no disease pressure is present on the leaves below the ear leaf at tasseling, then a fungicide application might not be warranted.

Decision making for justifying a fungicide treatment in corn depends on the target disease(s) such as common rust and/or southern rust. Several fungicides are labeled on corn, but contact fungicides containing chlorothalonil, maneb, and mancozeb can be eliminated from consideration since the active ingredients are not effective to justify use in field corn. Research has shown that fungicides belonging to the strobilurin and/or triazole groups are the most effective against foliar diseases in corn. Fungicides containing propiconazole by itself such as Tilt are useful, but better foliar disease control in corn with longer residual can be achieved using strobilurins such as Quadris, Headline, and Stratego. Also of consideration is that most fungicides are effective against disease for 14 to 21 days, corn takes approximately 60 days from silking to physiological maturity, depending on the hybrid used.

Fields should be scouted regularly to assess disease development on the lower leaves up to and including the ear leaf

Another discussion to consider is if there is a yield benefit from fungicide application on corn in the absence of disease in regards to enhancing and augmenting the plant health. In some other states, research has found in soybeans that certain strobilurin fungicides change the plant's physiology that sometimes enhances yield, even when diseases are not present. Even though yield increases occur in soybeans, it is not exactly clear why this happens and there is no clearcut formula to consistently achieve these results. As for corn, there may be enhanced plant health but studies conducted on field corn indicate no statistically significant improvement in yield from fungicide application in the absence of disease. In regards to plant health benefits, corn growers should be aware that by making a fungicide application in corn that a significant economic response is not assured.

In conclusion, there has not been enough research evidence to confirm a fungicide application to field corn will provide a yield benefit when there is not a disease present and there is no devised strategy for deciding whether or not a fungicide application to field corn will provide an economic return. Corn producers should take the following into consideration when making decisions regarding fungicide application:

- 1) Resistance to foliar disease of the hybrid being grown (On intermediate and moderately resistant hybrids, any yield benefit would not cover the costs of the fungicide application)
- 2) Scouting observations (amount of disease in the field)
- 3) Corn growth stage
- 4) Weather conditions
- 5) Fungicide, product labeling and application cost
- 6) Grain price

Thrips are problem that have gotten steadily worse in recent years, causing a variety of damage and control problems for tomato growers. Thrips hibernate over winter as adults, larvae, or pupae, and become active in the spring. Thrips are mostly transported around areas by the wind. One of the main concerns with thrip populations rising is the tomato spotted wilt virus. Thrips are vectors and can spread the disease through young thrips feeding on infected plants throughout a field, or adults that have been feeding on infected plants being carried by the wind to a different field.

One of the concerns of the growing thrip problem is identifying which species of thrip is present. There are several species, including the onion, tobacco, eastern flower, and western flower thrips. The most efficient vector of spotted wilt virus is the western flower thrip. Its eggs are inserted into the tissue of a plant, thus being protected from an insecticide spray. The eggs then hatch and feed in various protected places, like the flower of an infected plant, then spread it through the field. The control of thrips has many variables that will affect how well certain practices work.

Some new control methods have been researched within the last couple of years. One includes reflective mulch. When a reflective mulch was used, it showed a decrease in both eastern and western flower thrips. Also, applying a higher nitrogen fertilizer rate in Florida has shown to increase the western thrip population. In eastern Virginia, some new steps are being researched in control and identification of thrips.

For the first time, western flower thrips were found in several fields in eastern Virginia. This warranted new studies to gain better control of the thrip population. Dr. Tom Kuhar, an associate professor in the department of Entomology at the Virginia Tech Eastern Shore AREC in Painter, VA, is leading several studies involving thrips. One study is to get an idea of whether thrips are surviving over winter in any areas. Any thrips found will be identified to species, which will aid in the control methods used. If western thrip populations are present, there will need to be special control methods used due to the severity of damage they can cause. The effectiveness of monitoring tools will also be researched. Some new methods will include using petunias to monitor thrip pressure and spotted wilt virus. Petunias are very sensitive to thrip feeding and will show any virus if infected. Several new lures will also be tested, some with new pheromones and plant produced attractants. Dr. Kuhar will be evaluating several control methods using insecticides this year as well. In addition to standard insecticide sprays, the use of natural oils such as cinnamon and peppermint will be added to increase the effectiveness of the insecticide. These oils are hoped to push thrips out from their hiding places and put them in contact with the insecticide. A product called Ecotec will be used in this study. Dr. Kuhar plans to evaluate all the information collected from the various studies and share his finding with growers in eastern Virginia to better manage the growing thrip problem. With better understanding of what is present in the fields and the different ways necessary to control the pressure, the problems that accompany thrips can be better managed by the growers.



Agri-Technologies, Inc.

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**Contact us for more information
about our services!**

Agri-Technologies is a mission-driven organization with a clearly defined set of values. We encourage our employees to have a strong sense of purpose: a high level of self-esteem, and the capacity to think clearly and logically.

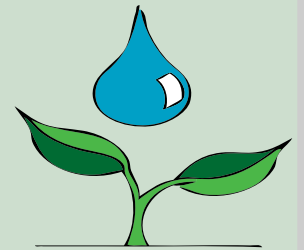
We believe we have a distinct competitive advantage and that competitive advantage is largely in the minds of our management and our employees as represented by their capacity to turn ideas into profits which enhances the accomplishment of our mission.

Agri-Technologies currently is providing production planning, in-season monitoring, contract research, and third-party certification on the following crops:

Tomato - Corn - Canola - Wheat - Soybeans - Cotton - Cucumber - Eggplant

Peanuts - Pepper - Squash - Tobacco - Cole crops - Potatoes - Citrus Fruit

Onions - Sweet Potatoes - Fruits and Nuts - Strawberries - Grapes



Crop Talk is a newsletter written for our clients by Agri-Technologies employees. Crop Talk's main purpose is to keep our clients informed of current news in the agriculture industry.

A Newsletter For The Clients Of Agri-Technologies, Inc.

**Crop
Talk**

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