Field Notes
April 27, 2007
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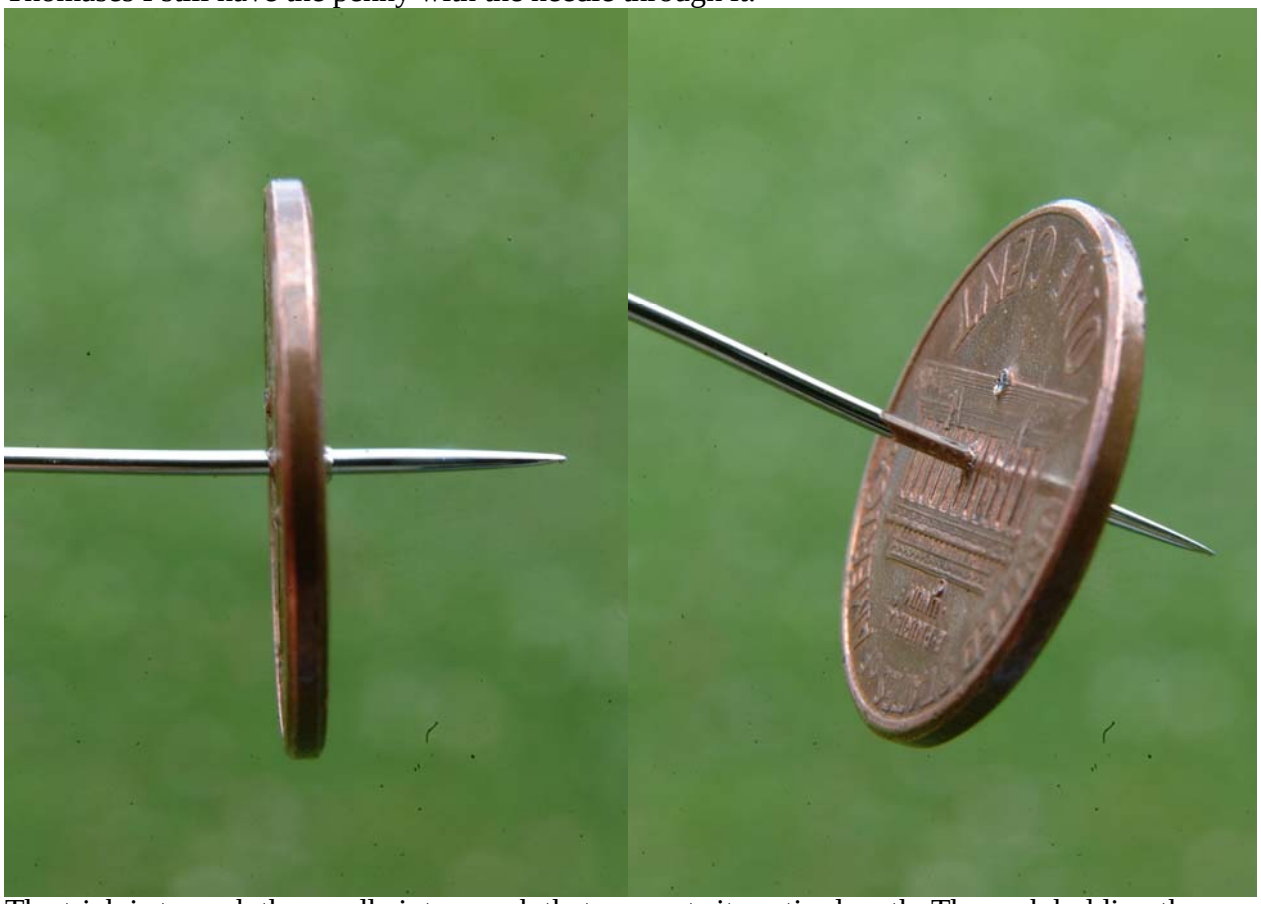
Disclaimer: Do Not Try This At Home!

Several times in the past I have used the analogy of driving a sewing needle through a quarter to illustrate how rice seedlings (or other plants having similar germination and emergence) can penetrate soil under one circumstance and not in another. In several cases the person or persons in the audience has been polite albeit skeptical. To prove the point I drove a sewing needle through a penny. I am too tight to use a quarter. I will admit it took a few tries to do it correctly, but the photographs below clearly show the needle through the penny. For the serious doubting Thomases I still have the penny with the needle through it.



The trick is to push the needle into a cork that supports its entire length. The cork holding the needle is placed on the object and struck with a hammer. Under normal circumstances the shaft of the needle would either bend or break, but because the cork provides lateral support it penetrates.

When seedlings have good lateral support they can emerge through a crust. If they begin to bend they will lose lateral support or have already lost it and cannot emerge. Two photographs of seedlings in last week's edition make this point.

Often subtle differences can be important. There are two times I can think of when the shape of the leaf tip can separate two weeds in circumstances when it could make a difference in weed control recommendation.

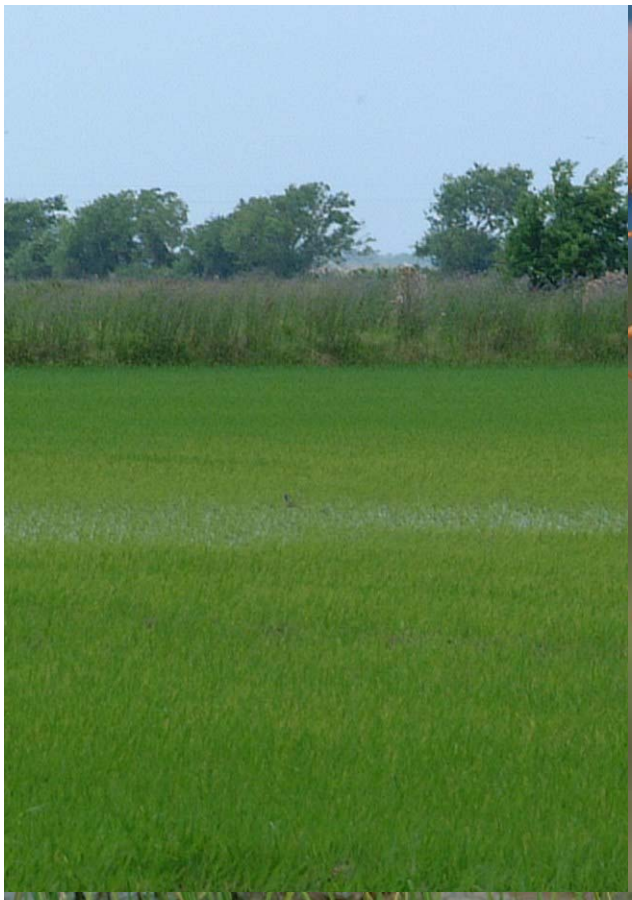
One example is shown in the photograph at left. The leaf tip on the left is blunt; the one on the right tapers over a much longer distance. The plant from which the leaf on the left comes is Mannagrass (*Glyceria declinata*). On the right is a leaf from Ryegrass (*Lolium multiflorum*). Apply glyphosate and the difference will be dramatic especially if the rate is fairly low. Mannagrass is very sensitive to glyphosate and ryegrass is difficult to control.

If these leaves were from two sedges; which would have the blunt tip, yellow nutsedge or purple nutsedge?

Many of the herbicides used today act slowly. This causes the grower or field man to wonder if the herbicide is working or will another recommendation have to be made.

The portion of grass stem shown to the right is from Knotgrass to which Clincher was applied earlier this week. While there is little overall evidence of herbicide activity when Dr. Harrell and I checked one of his research fields this morning it was easy to pull the tip of the stem out. The darkening of tissue at what was the node of the stem just below the growing point (the stem is upside down in the photograph). It is a clear indication of herbicide activity.

While this does not grant assurance that the plant will die it is a good indication that the grass will not compete and is likely to die.



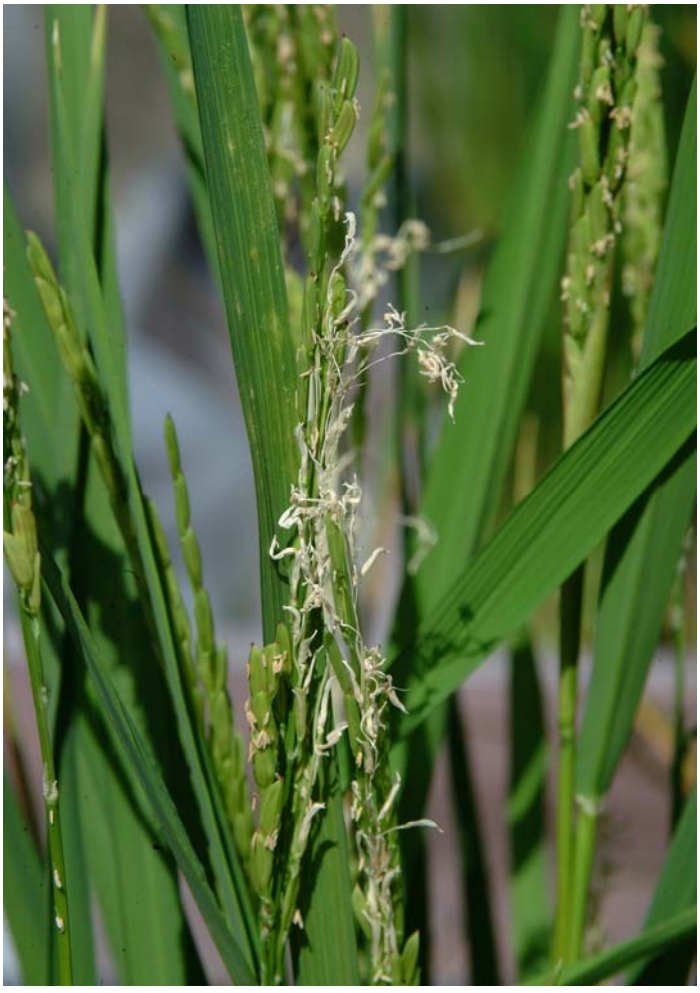
On the preceding page are three photographs taken in a field in Jeff Davis parish. We were asked to take a look at it because the grower and consultant thought they could have the beginnings of Localized Decline. We felt it was awfully early to start seeing this disorder. The photograph in the upper left is a view from a distance. There were two or three areas like this in the field.

In the bottom photograph the plants showed little or no tillering, lower leaves were dying or at least yellow and the upper leaves were very upright. All of these characteristics are symptomatic of phosphorus deficiency.

The seedlings in the upper right photograph have an excellent root system except that the roots are orange instead of white. Dr. Gary Breitenbeck identified this as iron plaque. It is thought this plaque can interfere with nutrient uptake especially phosphorus.

In an effort to test this theory we suggested an application of phosphorus in small blocks within the areas showing the symptoms. The idea is to overload the system with phosphorus so that some is available regardless of iron. By next week we will know if this was correct. We may also apply some silica because Dr. Breitenbeck is investigating the interaction of silica and iron. We'll let you know what happens.

I could have a little fun and ask you to try to figure out what is causing the symptoms shown on the plant in the photograph at right. I would just get a lot of guesses all of which would likely be incorrect. I know I would not know if I had not been with Dr. Dustin Harrell when he showed it to me in his green-house study at the Rice Research Station.



Dr. Harrell is continuing investigation into the effects of salt on rice. One major unanswered question is the effect of salt on yield of plants that make apparently normal vegetative growth.

That is what has happened here. Plants growing in several situations where salt contaminated soil was brought into the greenhouse have made "normal" vegetative growth. Unfortunately several panicles look like the ones in the photograph at right. Please note this is very preliminary. Dr. Harrell will let us know as soon as he is confident of the results.