

# TEXAS COOPERATIVE EXTENSION

## WEST PLAINS IPM UPDATE

Partners with Nature

News about Integrated Pest Management in Hockley and Cochran Counties  
Volume 9 - No. 2 KERRY SIDERS, EXTENSION AGENT - IPM May 18, 2004

### IN THIS ISSUE:

- \* Subscribe to West Plains IPM Update
- \* Participate in the Scouting Program
- \* Keys for Successful Weed Management
- \* Pros and Cons of Sub-surface Drip Irrigation

### 2004 West Plains IPM Update

WEST PLAINS IPM UPDATE is a newsletter which provides news of insect, weed and disease pests, and crop management suggestions for Cochran and Hockley Counties. The newsletter is written weekly during the growing season, from June through September. The newsletter will keep you abreast of current pest activity, natural enemies, biological and cultural control tactics, and chemical control options. The newsletter will cover cotton and other major crops grown in Hockley and Cochran counties during 2004.

You will have four options to obtain the newsletter:

#1 Free Paper Copy by Mail

#2 Free E-Mail Newsletter

#3 Free Internet Newsletter

The newsletter can be obtained, no charge, on the web sites: <http://hockley-tx.tamu.edu> , <http://lubbock.tamu.edu/ipm> or [www.tpma.org](http://www.tpma.org)

#4 Free Fax Newsletter

### Hockley and Cochran IPM Scouting Program

1. Field Scouting for insect, weed, and disease pests in cotton, peanuts, grain sorghum, sunflowers, etc.
2. Weekly to 3-4 day scheduling intervals.
3. Individual field pest report provided.
4. Management suggestions with emphasis on proactive IPM methods.
5. Management suggestions available upon request for irrigation, harvest aids, and other agronomic considerations.
6. Fall soil sampling for cotton root-knot nematode management suggestions.
7. Irrigated cotton or peanut scouting is \$5.25 per acre. Pricing for dryland and other crops available.
8. Prorated refunds of scouting fees for loss of crop due to natural causes.
9. Contact Kerry Siders, Extension Agent-IPM for more information at 894-2406(office) or 638-5635(mobile).

## **General Keys for Successful Weed Management in Field Crops**

Peter Dotray, Associate Professor & Extension Weed Specialist, Lubbock, Texas

Todd Baughman, Associate Professor & Extension Agronomist, Vernon, Texas

Wayne Keeling, Professor & Systems Agronomist, Lubbock, Texas

1. **Know your weeds.** Successful weed management starts with correctly identifying the weeds you are trying to control. Many weeds look similar, but may respond differently to mechanical and chemical weed control. There are several weed identification references available in text and on the internet.
2. **Know all weed control options that are available.** We generally think of herbicides as the only option for weed control. However, other options may include physical (hand pulling and hoeing), mechanical (plowing, cultivation), cultural (seeding date, seed population, row pattern, crop rotation, variety selection), biological (use of insects, mites, diseases, and other biological control agents), and prevention (weed seed dissemination by seeding and movement of equipment). Herbicides in combination with other methods often may be more successful than either method alone.
3. **Know what your herbicides can and cannot do!** Sometimes we fall into the trap that all herbicides are alike. In fact, they can be quite different. Differences may include water solubility (movement in soil), soil activity, length of soil activity, movement in the plant, spectrum of weed activity, ability to volatilize and move off-target, etc. Knowing what our herbicides can and cannot do will help us make better choices on which herbicide to choose in light of the weeds present, rotational crop concerns, and if additional weed control help is needed. Always carefully read and follow labeled instructions and pay close attention to rotational crop restrictions, weed size, and the addition of spray additives (crop oil concentrate, fertilizer, non-ionic surfactant, etc.).
4. **“Yellow” herbicides are a good foundation for weed control.** The dinitroaniline herbicides (Prowl, Treflan (trifluralin), Sonalan, others) are effective on annual grass and small-seeded broadleaf weeds. The success of these herbicides is based on using appropriate labeled rates for your soil type. Uniform incorporation of these herbicides is critical to ensure germinating weeds come in contact with the herbicide prior to emergence. These herbicides can also be used in minimum tillage situations where water is used to incorporate. Keep in mind this may not be the best way to incorporate them, but may be the best way under reduced-tillage cropping systems. Rates for water-incorporation are generally higher than rates for mechanical incorporation, so follow label recommendations for your soil type. With overhead irrigation, it is necessary to apply from 0.75 to 1.0 inch of actual water for proper incorporation of the yellow herbicides. The current Prowl label allows for preplant chemigation or a surface application followed by water and preemergence chemigation or a surface application followed by water. The current Sonalan labels states that Sonalan use in peanuts may be surface-applied followed by irrigation. There is no chemigation label for Sonalan. Treflan (trifluralin) may be chemigated. Do not surface apply Treflan and use irrigation to incorporate.
5. **Start with a clean seedbed.** Winter weeds and early-emerging summer weeds, like tumbleweed, should not be present at the time the crop is emerging. Early-season weed

competition can slow crop growth and compete for water and nutrients. The most critical time for weed control is the first 4 to 6 weeks after emergence. This is the time that weeds can have the greatest impact on yield.

6. **Are additional soil-applied herbicides needed?** The “yellow” herbicides are effective on annual grasses and several small-seeded broadleaf weeds, but some escapes will occur. Nevertheless, several larger-seeded broadleaf weeds such as morningglory, cocklebur, and sunflower species, and perennials such as yellow and purple nutsedge and silverleaf nightshade (whiteweed) are not effectively controlled. Using preemergence herbicides may enhance control of these weeds.

7. **Properly timed postemergence herbicides are most effective.** The success of herbicides applied postemergence is largely dependent on weed size and coverage, which often go hand in hand. Be careful not to exceed weed size restrictions according to the herbicide label. Use crop oil concentrates or other adjuvants if specified on the label. Use an appropriate carrier volume to ensure thorough spray coverage on the weed. A weed that does not come in contact with the herbicide will not be controlled. Not all herbicides have broad-spectrum activity, so match the postemergence herbicide with the weed(s) you are trying to control. Postemergence herbicides will be more effective when applied to non-stressed weeds, which often coincides with the first part of the growing season. Controlling weeds early is when you can achieve your biggest bang for your buck, the time at which weed competition is at its peak.

8. **Be careful of crop injury.** It is very important to understand the potential causes of herbicide injury. The following is a list of potential causes: improper incorporation, spray-tank contamination, improper sprayer calibration, excessive herbicide rate for the soil type, improper herbicide application timing or method, failure to adhere to crop rotation restrictions, interaction with other pesticides or spray additives, application of herbicide to crops under stress, off-target drift of herbicides labeled for use in other crops, small concentration of herbicides in irrigation water, and normal herbicide symptomology.

9. **Scout fields for unusual weeds.** Although weed resistance may be over stated in most cases, we need to watch for weed control that decreases over time. A buildup of resistant weeds does not occur quickly, so be watchful of poor control over time. Using a certain type herbicide may result in weed shifts. Be watchful of new weeds in the area and new weeds per section of land. New, difficult-to-control weeds should be a top priority so small infestations do not become bigger problems.

10. **Weed control starts in the fall of the year.** After harvest, the fall months are good times to work on perennial weed patches. Systemic herbicides like Roundup, 2,4-D, and Clarity can be very effective because these herbicides are absorbed by leaves and move below ground and disrupt storage tissue. This disruption should allow for fewer plants to emerge the following spring. Make sure that applications are made prior to the first frost. Applications after freezing temperatures have occurred will be much less effective due to decreased absorption and translocation.

### ***SDI (Sub-surface Drip Irrigation), Pros and Cons***

The following should be considered potential pro's and cons of subsurface drip irrigation. Some producers might see an aspect as an advantage, while another might see an aspect as a disadvantage. For example, there are opportunities for improved cultural practices with SDI while at the same time there might be less tillage alternatives.

### **Advantages**

More efficient water use  
Greater water application uniformity (resulting in better control of the water, nutrients, and salts)  
Enhanced plant growth, crop yield and quality  
Improved fertilizer and pesticide management  
Less water quality hazards  
Less nutrient & chemical leaching and deep percolation  
Limited weed growth and reduced weed germination  
Decreased energy costs  
Less disease pressure due to drier and less humid crop canopies  
Improved cultural practices  
Warmer soils possibly aiding in earlier planting or harvest  
Field operations can occur during irrigation  
Less irrigation equipment exposed to vehicular damage  
No soil crusting due to irrigation  
Improved double cropping opportunities for some crops and regions  
Easy to automate  
Less mechanized parts  
Less irrigation system corrosion  
Improved opportunities for use of some degraded waters  
Reduced weather-related application constraints (especially high winds and freezing temperatures)  
Increased flexibility in matching field and irrigation system sizes  
Well suited to widely spaced crops provided sufficient soil wetting pattern is achieved  
Pressure compensating systems not as limited on slopes as surface irrigation  
Possibilities for using system for soil fumigation  
Possibilities for use in germination, depending on dripline depth, flow rate and soil constraints

### **Disadvantages**

High initial investment cost  
Plugging of system  
Persistent maintenance requirements  
May require more complex water quality management than surface drip irrigation  
Operation and management may require more consistent oversight  
More design components (ie flush lines, etc.) than surface drip irrigation  
Fewer visual indicators of system operation  
Cleaning water through filtration required  
Subsurface repairs more difficult  
Rodent problems more difficult to solve  
Shorter design life than alternative irrigation systems  
May be less forgiving in design errors than alternative irrigation system  
Restricted plant root development  
Wetting pattern may be too small on light sandy soils  
Surfacing or tunneling of the emitter flow to the soil surface (also called chimney effect)  
Possibility of soil ingestion at shutdown if Vacuum occurs  
System is spatially fixed, so annual crop spacing/orientation must be carefully matched  
May not be suitable for crop germination  
Salinity may be increased above dripline, increasing salinity for small germinating crop  
Tillage options may be limited  
Length of run may be limited  
Less developed technology than some alternative irrigation systems  
Concerns about waste product (driplines) in subsoil if system is abandoned  
Fewer turnkey systems available

Root intrusion into dripline can occur  
Compaction around dripline can occur in some soils and depths

West Plains IPM Update is a publication of the Texas Cooperative Extension IPM Program in Hockley and Cochran Counties.

Editor: Kerry Siders, Extension Agent-IPM

Production: Patty Castaneda

Contact information: 1212 Houston St., Suite 2 Levelland, TX 79336 (806) 894-2406 (office),  
638-5635 (mobile), or 897-3104 (Fax)

[ksiders@tamu.edu](mailto:ksiders@tamu.edu) (E-mail),

<http://hockley-tx.tamu.edu> (County website)

[www.tpma.org](http://www.tpma.org) (TPMA website)

Educational programs conducted by Texas Cooperative Extension serve people of all ages regardless of socioeconomic level, race, color, sex, religion, handicap or national origin. The information given herein is for educational purposes only. References to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by Texas Cooperative Extension is implied.

The Texas A&M University System, U.S. Department of Agriculture, and the Commissioners Courts of Texas Cooperating