

## **Not too early to plan your corn weed control**

**By: Mike Hunter**

This is a good time of year to do some strategic weed control planning. There are several corn herbicide choices to choose from and there are application programs to achieve good weed control. The focus of this article is to look at the advantages and disadvantages of certain herbicide application programs: one pass vs. two pass programs, preemergence (PRE), preplant incorporate and total postemergence (POST) programs.

A one pass application program pertains to both PRE and POST herbicide applications. You can make one trip before the corn has emerged or you can wait and make one trip after the corn (and weeds) have emerged. Most growers like the idea of a one pass herbicide application program. Less trips across the field will keep application costs lower. It doesn't matter if you hire your spraying done or you do your own spraying, this holds true for both situations.

A planned two pass (PRE followed by POST) program offers the best chance for optimum weed control. The main disadvantage is the additional application cost when hiring a custom applicator or the increased labor and fuel costs for those that spray their own corn. A two pass herbicide program is the most consistent way to achieve season long weed control and protect corn yield potential.

PRE corn herbicides can provide good weed control. An advantage of PRE herbicide programs is that the work is usually done before alfalfa and grass fields need to be harvested. The biggest drawback to a PRE herbicide program is in order for PRE herbicides to work they be present in the soil solution where the weed seeds germinate. Most weed seeds will germinate in the top one inch of the soil. PRE herbicides need about ½ to 1 inch of rainfall within a week of application to sufficiently move the herbicide to the soil depth required for effective weed control. Don't forget that many PRE herbicides can be applied prior to planting corn and mechanically incorporated to move the herbicide into the soil layer where the weeds will germinate.

Pre plant incorporation of soil applied herbicides is no longer a common practice on farms today but still remains a viable option, especially when the soil and weather conditions are dry around planting time. The PRE herbicide only needs to be incorporated or mixed into the top 1 to 2 inches of the soil. To do this with a field cultivator, tandem disk, or springtooth harrows, an equipment operating depth of 3 to 4 inches will place the herbicide in the upper 1 to 2 inches of the soil. Be careful not to put the tillage implement too deep or it will dilute the herbicide in the soil profile and compromise the weed control.

Total POST herbicide programs have been around for a long time. This is not a new concept, however, each year it seems more growers shift some of their acres to a total POST weed control program. The introduction of Roundup Ready and Liberty Link hybrids has certainly influenced the adoption of this weed control approach.

Corn growers considering using total POST programs must understand how early weed competition in corn can affect yields. An advantage to a POST program is that you are able to choose the herbicide based on the weed population present. Herbicide rates

are adjusted according to the size of the weeds at the time of application. Generally speaking, the smaller the weeds, the less amount of herbicide necessary for control. The disadvantages to POST programs include: proper timing, weather conditions and potential yield losses if applications are delayed.

In most scenarios, the initial POST herbicide application should be done when the weeds are usually 2 to 4 inches tall. These are pretty small weeds, however, if you want good results you need to be timely. Research at the University of Guelph by Dr. Clarence Swanton determined the critical weed-free period for corn to be from the third to the eighth-leaf stage. Practical implications for corn producers are that weeds that emerge with the crop have little effect on corn yields until the corn gets to the third-leaf stage. However if these weeds are not brought under control early, they will affect final yields. This weed-free period in corn must extend to at least the eighth-leaf stage. Weeds that emerge after the corn passes this eighth-leaf stage will generally have little effect on corn yields given near normal conditions. (Greg Stewart and Hugh Martin, OMAFRA)

Weather conditions always seem to create problems. Windy conditions, muddy fields and rain can prevent timely herbicide applications. If these conditions last for any length of time, your opportunity to apply POST herbicides when the weeds are still small is missed. All of a sudden your small weeds are now too big to control. Once you have missed your narrow application window your back is up against the wall. If you face these weather roadblocks when you are trying to apply a PRE herbicide program, it is not too late to switch to a POST program.

If a total POST program fails then there are not many good options left. Depending on the height of the crop and when the weed “escape” or failure is discovered, you might be able to come back in with a rescue treatment. If it is too late for anything yield losses may be a result of the poor weed control.

Strategic weed control planning is an important part of growing corn. A well-designed weed control program will increase your chances for success. Each program has advantages and disadvantages that need to be looked at. You must decide which plan is right for your situation. In some cases this may involve using more than one of these approaches on your farm. Remember to always follow herbicide label recommendations on rate, timing and methods of application.