Drought brings on switch to incorporation

Herbicide incorporation – by no means a new farming tool – is the subject of increased grower interest this year.

Reasons? For many, last season's widespread drought conditions, especially around planting time, is the key. As is well known, many thousands of acres that had been treated with surface applied herbicides were so weed infested that growers were faced with a very real threat to their yields. Without rain after application – often for fairly extended periods – these herbicides just couldn't work. Extensive salvage operations to restore effective weed management had very mixed results.

When growers lose their investment in chemical as well as risk a loss on their crop, it adds up to a potentially devastating one-two punch they can ill afford.

What's more, the weather outlook down the road continues to be uncertain, at best. Some weather specialists go so far as to indicate an increasing probability of drought. Others say, more conservatively, there is at least ample evidence that growers should not depend on the generally good weather pattern they have gotten used to over the past 15 to 18 years. They advise, further, that growers should, consider adjusting their management stratagies accordingly to minimize the affects of weather variables, particularly drought.

As a result, the particular advantage of incorporation when it comes to "weather insurance" has taken on a fresh appeal.

While the basic principles of applying preplant herbicides and incorporating them into the soil have remained pretty much the same, in recent years newer equipment and refinements in application techniques have made herbicide incorporation an even more valuable farm tool in terms of efficiency and convenience.

Basically, however, the advantages of incorporating a preplant-applied herbicide into the soil are quite evident. Most importantly you don't have to rely on rainfall to activate the herbicide – it's already positioned in the top two or three inches of soil where it can start working on weed seeds as they germinate. Weed competition for soil nutrients, moisture, and sunlight is largely eliminated and crops get off to a vigorous start and good, high-yielding stands are established. Controlling weeds early also frees up growers' time for other important jobs during the busy spring season.

Experience over the past few years has shown the tandem disc followed by a spike tooth harrow, or some other leveling device to be the most effective tool for adequately mixing the chemicals into the soil before planting. Power driven tillers are also recommended. When possible, application and incorporation should be done in the same operation. The result is a chemical barrier across the full area of the field that controls weed growth - even deep germinating weed seeds must pass through the chemical as they grow toward the surface. Most herbicide specialists recommend concentrating the chemicals in the top two or three inches of soil to avoid dilution.

Incorporation equipment and the calibrated depth and uniformity of herbicide placement – can vary considerably. As a loose rule of thumb, however, the most herbicide will be placed at about half the depth the equipment is operated: if the disc is set to operate four inches deep, most of the herbicides will be deposited in the top two inches. A second cross discing is often recommended to increase uniformity of application – especially in heavy, cloddy soils.

Tooling up for soil incorporation can be relatively simple and inexpensive. The first step is to check the adaptability of existing equipment. Smaller acreages may require only a simple spray boom fitted to a tractor or tillage tools. The spray unit can be followed by a disc and harrow for immediate incorporation.

Another workable system consists of a tank or drum sidemounted on a tractor to feed a belly boom. Discs that follow should be set to cut slightly narrower than the spray pattern. Equipment designed for smaller farms can cost as little as $100.

Larger acreages require more elaborate systems with bigger tanks, pump, and spray boom fitted to either tractor or discs. Otherwise, the grower can use one of the variety of specialized kits. These are easily assembled units and include such features as adjustable booms that can be fitted to variously sized discs and incorporation equipment, low friction chemical resistant hose, and uniformly engineered nozzles. Gandy units are used to apply granular materials.

Field experience indicates that use of a spike tooth harrow after the disc improves the mixing action in the soil. A shallow set spring tooth harrow can also be used behind the disc with good results. Plank floats or cultipackers following the discs also help mixing and smooth the seed bed for planting.

There are several other factors that can affect weed control with herbicide incorporation that should also be considered. They include different soil textures, rainfall after application, and the specific weed spectrum in the field.

For example, preplant herbicides like Sutan + and Eradicane on corn, Vernam and Treflan on soybeans, and Eptam on various crops must be incorporated immediately after application. Delay allows a breakdown or loss of active ingredient and reduces the effectiveness of the treatment. Growers usually solve this problem by applying the herbicide and incorporating from the same rig in one trip over the field.

Rainfall, is heavy after application, may leach the more soluble herbicides too deeply into the soil. Other factors like soil texture, temperature, and pH may affect performance, too. Label instructions for each herbicide should be consulted in taking account of these variables.

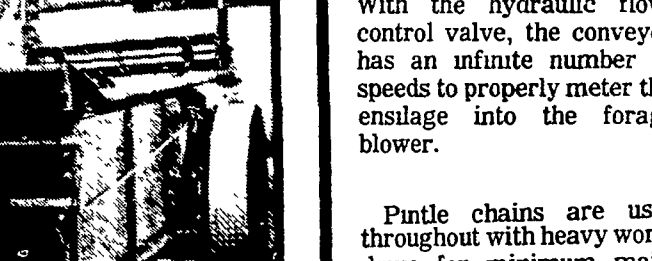
Weed spectrum, of course, is critical in choosing an affective herbicide or combination to do the job. Bladex and atrazine are highly effective on many of the common broadleaf problems in corn. When grassy weeds, particularly some of the newer "problem" varieties, are evident, Sutan + or Eradicane may be the choice on corn. Sutan + is also labeled for tank-mix application with atrazine or Bladex for broader spectrum control. Eradicane, generally used on corn to check tough weeds like johnsongrass, wild cane (shattercane), and quackgrass, is now registered for use as a tank mix with atrazine.

Finally, mention should be made of one of the newer, innovative techniques for incorporating herbicides - herbigation. This, of course, pertains only to irrigated crop production and as the name indicates it refers to applying herbicides directly on the crop through the irrigation system. There are various ways of doing this depending on the type of irrigation system used. Stauffer Chemical Company which introduced the herbigation concept has several herbicides EPA - registered for this use pattern. Crops on which it is currently being used successfully include corn, alfalfa, rice, sugarbeets, potatoes.

Instead of discs or other tillage equipment, incorporation is achieved as the water from the system moves the chemical into the soil.

Whatever technique is used, however, herbicide incorporation is one of the better ways to minimize the risks of weather and to help maximize herbicide effectiveness.

WHAT'S NEW



STATIONARY CONVEYOR

A new Fox stationary conveyor box being introduced by the Farm Equipment Division of Koehring will help reduce time spent waiting while forage wagons and trucks are being unloaded.

With the new Fox stationary conveyor, loads of silage or haylage are simply dumped on the conveyor platform. The truck or forage wagon is then free to return to the field for another load while the conveyor feeds the forage material into a blower. As a result, Fox engineers explain, farmers and ranchers may find that they will need less hauling equipment and manpower.

The large capacity Fox Stationary Conveyor Box is ideal for the farmer or rancher who hauls silage or haylage long distances and needs quicker turn-around on unloading.

It has four heavy-duty apron chains with a two speed transmission which moves material forward to the beaters and then can be shifted down to a slower speed to properly feed ensilage into the forage blower. With the hydraulic flow-control valve, the conveyor has an infinite number of speeds to properly meter the ensilage into the forage blower.

Pintle chains are used throughout with heavy worm drive for minimum maintenance, says Fox. The conveyor is designed to be driven with tractor hydraulics.

The two wheel axle and the tongue design makes it easy to handle when moving, says Fox.

The Farm Equipment Division of Koehring, headquartered in Appleton, Wis., is a major manufacturer of forage harvesting and handling equipment and tillage tools.