



Enhance Control *in your* Burndown/Residual Program

Early season weed control is a vital first step in maximizing yield potential. Yield loss due to early weed competition is well documented and can range anywhere between 5% and 50%. To reduce competition and give your crop the early advantage, an optimized burndown/residual program is necessary. There are many options from which to choose when selecting burndown and/or residual products. Along with the many products, there are other factors affecting the efficacy of your program. Weed pressures, resistance issues, tillage practices, timing, application techniques, and environmental factors such as temperature and moisture can all affect program performance. To enhance herbicidal activity and improve the application characteristics of your burndown program, the addition of an adjuvant of the proper type and at the correct rate is critical to the success of your program.

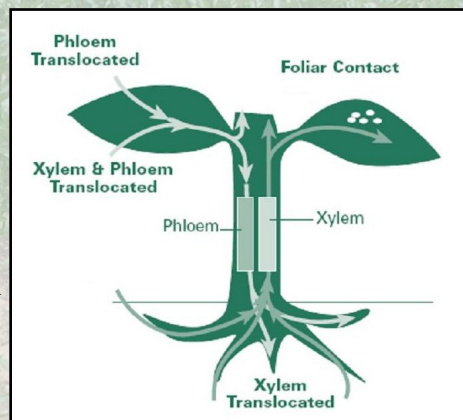
A herbicide must meet several requirements to be effective. It must come in contact with the target weed, be absorbed by the weed, move to the site of action in the weed, and accumulate sufficient levels at the site of action to kill or suppress the target plant. Weed control is unsatisfactory unless these requirements are met.

There are basically two types of herbicide products available:

- **Contact** — Not translocated and must be applied to the site of action.
- **Systemic** — Translocated throughout the plant (via xylem, phloem or both) to the site of action.

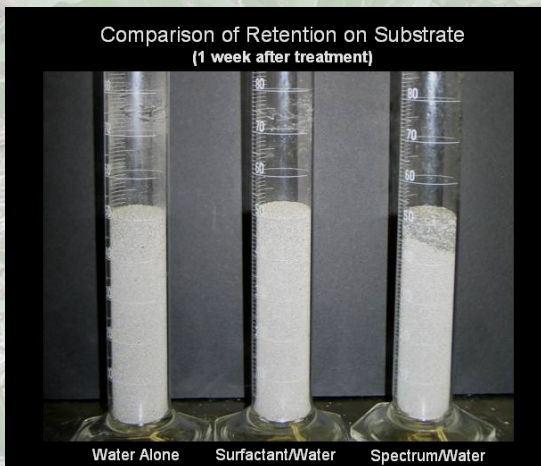
Contact materials must come in contact with plant/weed surfaces and disrupt the cell structure in order to be effective. With these type materials, thorough spray coverage and spray retention is key to optimum performance.

Translocated materials must come in contact with plant/weed surfaces and be translocated into the plant structure where it moves through the plant to its site of action.



Spectrum provides the characteristics needed to enhance your burndown/residual program. Spectrum is a blend of highly refined methylated seed oils, a two phase organosilicone surfactant system, and premium emulsifiers formulated to maximize your burndown/residual system (even in cooler weather). The methylated seed oil

(MSO) component is highly refined and optimized to supply the correct oil fractions and highest amount of methylation possible, thus providing superior coverage, penetration, and retention properties in a uniform droplet size. The two phase silicone surfactant system optimizes the spreading and translocating properties of both water and oil phase materials thereby getting more of the active to its site of action. The premium emulsifier system ensures compatibility with a wide array of materials and even distribution in the field making your application more efficient and effective.



Most residual herbicides are of the systemic type; meaning they must be absorbed and then translocated to the site of action. Residual herbicide materials are translocated in the xylem of plants and are most effective as soil-applied or early postemergence treatments because translocation is only upward (from the roots to the leaves). Herbicide placement can be critical to performance. Most small weed seeds germinate and emerge from the top ½ inch of soil. Herbicides applied and positioned near the soil surface will be most available for absorption by shallow-germinating weed seeds. However, larger seeded weeds that emerge from deeper in the soil may not be controlled very well by a preemergence herbicide unless it is incorporated or moved deep enough into the soil.

Because oil based materials move into the soil and evenly coat soil particles, herbicide materials are evenly distributed in the soil profile when used in conjunction with an oil based adjuvant. Oils also stay in the soil longer than do water based materials thereby retaining more of the active material in the soil profile where it is most available for absorption and translocation.

The characteristics that make Spectrum an excellent adjuvant on plant and leaf surfaces also make it the adjuvant of choice for residual herbicide treatments in the soil. Uniform droplet size and on target deposition along with the wetting and penetrating properties of Spectrum get your active herbicide to the target and keep it there longer.