METHYLATED SURFACTANTS

Methylated Oils

Methylated oils are derived from free fatty acids extracted from oil crops such as soybeans. These fatty acids are then reacted with methanol alcohol to produce methyl esters of these fatty acids. Methylated Oils have properties that make them desirable as Spay Adjuvants.

A. **Methylated oils do not evaporate from the plant surfaces.** They have high boiling points that cause them to remain on the plant surface until they penetrate the cuticle.

B. **Methylated oils remain as an oily liquid on the plant surface for maximum contact with the plant surface.** A crystalline or solid form of a herbicide cannot easily penetrate the cuticle. Herbicides dissolved in an oily liquid are better able to penetrate plant cuticles because liquids flow or move more easily than solids.

A major component of the plant cuticle is wax. Cuticular wax has a chemical structure similar to methylated oils. Methylated Oils tend to be liquids while cuticular waxes are solids. Because the methylated oils are liquids, they tend to lubricate the wax molecules and cause the wax molecules to **"slip apart"** as the methylated oils penetrate the waxy leaf surface. Because methylated oils begin to penetrate the plant cuticle as soon as the spray droplet is applied the herbicide molecules easily penetrate this cuticular barrier and are transported to the "target site" in the weed.