

FORMULATION

— it matters

Without effective, safe and easy-to-use formulations, our pesticide products could not deliver satisfactory results

BY RON HALL / Editor in Chief

Turf and landscape care providers often overlook the importance of formulation in the effectiveness of the pest control products they choose and use. A formulation is a mixture of active and inert ingredients that make a pesticide more convenient to handle, safer and easier to apply. The inert ingredients are usually solvents or carriers.

It's easy to focus on the active ingredient (a.i.) and neglect to pay sufficient attention to formulation and how that too figures into solving particular plant health problems, whether for turf or ornamentals. Pesticide manufacturers spend well over \$100 million

in discovering, testing and preparing a new a.i. for the market. The process takes a decade, usually more. Early in the process, they begin investigating the best way to maximize the effectiveness, safety and delivery of that a.i. to the pest — a formulation. And while not as “glamorous” as the development of the active, formulation development involves its share of sophisticated science, too, not to mention regulatory oversight and end user acceptance.

In a broad sense (and because the Super Bowl is just weeks away), let's liken the relationship between a.i.'s and formulation to that of a quarterback and his offensive line. While the quarterback is the guy charged with making things happen, he can't do it

without the help of his usually less-well-appreciated linemen. At the risk of reminding Cleveland Browns' fans of the wretched '06 season let's abandon that analogy and remark that the choice of formulation is critical in solving a pest problem and achieving the desired result.

The selection should be based on the pest's habits, environmental and weather conditions, mode and ease of application, spray drift or runoff concerns and, in some cases, regulatory requirements.

Here are formulations commonly used in the professional turf and ornamental market:

- ▶ **Soluble concentrate (SL):** water soluble a.i. mixed with water and a surfactant or penetrant.
- ▶ **Suspension concentrate (SC):** water insoluble a.i. ground to a certain particle size and dispersed in a stable suspension.
- ▶ **Emulsifiable concentrate (EC):** a.i. dissolved in organic solvent and forms an emulsion when added to water.
- ▶ **Emulsifiable oil in water (EW):** water insoluble a.i.

ground to a certain particle size and dispersed in a stable suspension then blended with an oil or may be an oily pesticide blended into a stabilized aqueous suspension.

▶ **Wettable powder (WP) and soluble powder (SP):** water-soluble packaging that when dispersed forms a solution or suspension of a.i. in water.

▶ **Water dispersible granule (WG/WDG):** granules to be applied after disintegration and dispersion in water. There can be a wide range of a.i. in the granular product range.

▶ **Spreadable granule (G/GR):** a.i. coated or incorporated onto a spreadable granule.

▶ **Granular bait (GB):** a.i. coated or incorporated on a granular designed for use as a bait attractant for target pests.

Formulation technology has progressed light years in the past 10 to 15 years, resulting in a greater variety of formulations available to lawn care and landscape pros.

Applicators, whether they fully appreciate it or not, benefit from formulation technology. Advancements in formulation give them more pest treatment options as well as increasing the utility of pest control molecules and giving new life, new uses and adding value to older chemistries. **LM**