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SC1 305 PESTICIDES

Synthetic pesticides

- Include
 - organophosphates
 - Carbamates
 - Pyrethroids
 - biopesticides.
- The organophosphate and carbamate pesticides affect the nervous system
- As a group, the organophosphate and carbamate pesticides are probably the most widely used insecticides, although many are being restricted because of their toxicity.

Why Add Inert Ingredients?

1. For ease of pesticide product handling
2. Inerts make measuring and mixing pesticides easier
3. To provide for safety
4. Makes the **Ai** work better
 - Better penetration
 - More selectivity
 - Increased effectiveness



Adjuvant

- The term adjuvant basically means additive
 - Formulation additive
 - Additive which is sold separately to mix with the product when tank mixing
- Labels will often recommend to add an adjuvant
- Include surfactants, spreaders, wetting agents, colorant dyes, buffers, antifoaming agents, safeners, etc.



Emulsifiable Concentrate (E or EC)

- **Advantages**
- Easy to handle
- Little agitation
- Relatively easy on equipment
- Leaves little residue
- **Disadvantages**
- Phytotoxic – plant injury
- Easily absorbed by the skin
- Flammable
- Deterioration of rubber and plastic hoses

Water dispersible Granules (Dry flowables)

- Water dispersible granules (WDG) are also known as Dry flowables (DF)
- The dry powder is aggregated into granular particles with inert fillers such as clay.
- During application, the granules are suspended in water to form a thick suspension for spraying
- Advantages over wettable powders:
 - During the mixing process, dry flowables pour more easily from the container and, because of their larger particle size, reduce inhalation hazard to the applicator.

Adjuvants work at three levels

1. Modifying how chemical components or products interact in the spray tank

- The two most common at this level are **compatibility agents and drift retardants**.
- Compatibility agents are usually **surfactants** that enable active and inert materials to co-exist in a stable solution or suspension.
- These products are normally factory fitted into the formulation.