Technical Application Report

Agrochemical Antifoam

Pesticides, fertilizers and other crop protection chemicals are applied to the crop using a variety of spraying methods. These chemicals are supplied to the farmer in a liquid concentrate. The farmer will then carry out on farm mixing or diluting prior to spraying. Often two or more chemicals may be added together to be applied in one application. The farmer may also add a chemical adjuvant to the pesticide or fertilizer.

In the UK the Pesticides Safety Directorate (PSD) is an Executive Agency of the Department for Environment, Food and Rural Affairs (Defra) and defines an adjuvant as;

'A substance other than water, without significant pesticidal properties, which enhances or is intended to enhance the effectiveness of a pesticide when it has been added to that pesticide'

These adjuvants are controlled and approved by the PSD and include the following types:

Extending agents
Wetting agents (For example Silwet L77 is approved)
Sticking agents
Fogging agents

However, the PSD does not regulate other spray additives such as dye marker, carriers, anti-transparents or **anti-foaming** agents as adjuvants.

In the US antifoams must meet the criteria laid down by Environmental Protection Agency (EPA)
In mainland Europe there is currently no legislation concerning the use of antifoam for use with agrochemicals, however, some European customers prefer the product to meet the requirements of the EPA in the US.

THE Role of Antifoam

Minimising foam during the mixing and spraying process is important as foam will reduce the efficiency of both the chemical and spray equipment. Therefore, silicone antifoams can play a significant role in overcoming the problem of foam and are used in two basic methods

1) Additives used at time of manufacture
   In this process the antifoam is used to control foam during the manufacturing process and also help reduce foam during the dilution process on the farm.

2) Additives used on farm at the time of mixing
   Here the antifoam is supplied direct to the farmer who will add to the mix during dilution with water

Traditional antifoam liquids can be used by the manufacturer when producing liquid concentrates and the farmer during on farm mixing.

Liquid Antifoams

CHT Silicone Antifoams are available either as 100% active compounds or emulsions with silicone activity levels of 5% - 50%.

AF 1500LV:-*100% compound particularly well suited to use within the manufacturing process*.

Key Features

- 100% active compound
- Low viscosity 550 mPa.s
- Ideal for highly dispersed aqueous systems

Addition rates would vary depending upon the application, formulation and production methods, but a starting point would be 50ppm of active silicone.

AF 1316:-*10% active antifoam particularly well suited to on farm use*

Key Features

- 10% active silicone
- Easily dispersed in water
- Prevents foam build up
- Fast and efficient knock down of foam
- Wide pH range 1.5, pH <10

Addition rates would vary depending upon the application, formulation and production methods, but a starting point would be 50ppm of active silicone. AF 1316 can be pre-diluted with up to 50% water if required for faster dispersal.