Foam-Clear

Our new Foam-Clear range of products offer the *latest technology* in foam control for the Food, Beverage, Bioethanol, Industrial and Agricultural industries.

Foam-Clear Technical Note – Agricultural

Minimising the foam during plant protection and foliar fertiliser product mixing and spraying processes is of utmost importance, as foam will reduce the efficiency of both the plant protection product and spray equipment. For this reason, KCC Basildon Chemicals have been working closely with partners in this industry to create high performance solutions to their foaming problems. A new product, Foam-Clear ArraPro-S has been developed to meet this demanding application.

Customer trials have shown that Foam-Clear ArraPro-S is ***superior at foam control*** in both ***Fungicide SC*** and ***Fungicide EC systems***, as well as ***excellent*** in ***Herbicide SL***.

Definitions:

- Fungicide SC (aqueous suspension, low surfactant content)
- Fungicide EC (non-aqueous solution, high surfactant content)
- Herbicide SL (aqueous solution, high salt content, high surfactant content)

This technical note covers in-house application testing of Foam-Clear ArraPro-S in a range of challenging media, for example ionic, non-ionic, high and low pH. Foam-Clear ArraPro-S was tested against pertinent historical Basildon Chemical products to show the step change in performance of this new product. This was assessed by evaluating the knockdown and durability antifoam properties.

<u>Products tested:</u>

All samples tested were emulsions.

- **ArraPro-S** - for use in a wide range of plant protection formulations including herbicides, pesticides and fungicides. It can also be used as a defoaming additive for spray tank operations.
- **FD20PK** - for brewing, food processing and other applications where a quick knockdown of foam is required.
- **AR20** - for use in detergent and textile applications with durability under alkaline conditions.
- **BC 2600** - for use in industrial applications where quick knockdown of foam is required.

Testing media:

- Non-ionic surfactant, low pH
- Non-ionic surfactant, high pH
- Anionic surfactant, low pH
- Anionic surfactant, high pH

Procedure:

1.1 of the test media was allowed to generate a stable foam, typically 30 cm high. The antifoam emulsion was injected by a syringe at 0.2 mL per dosage. Time and foam height were recorded periodically over a total of 15 minutes.

Results

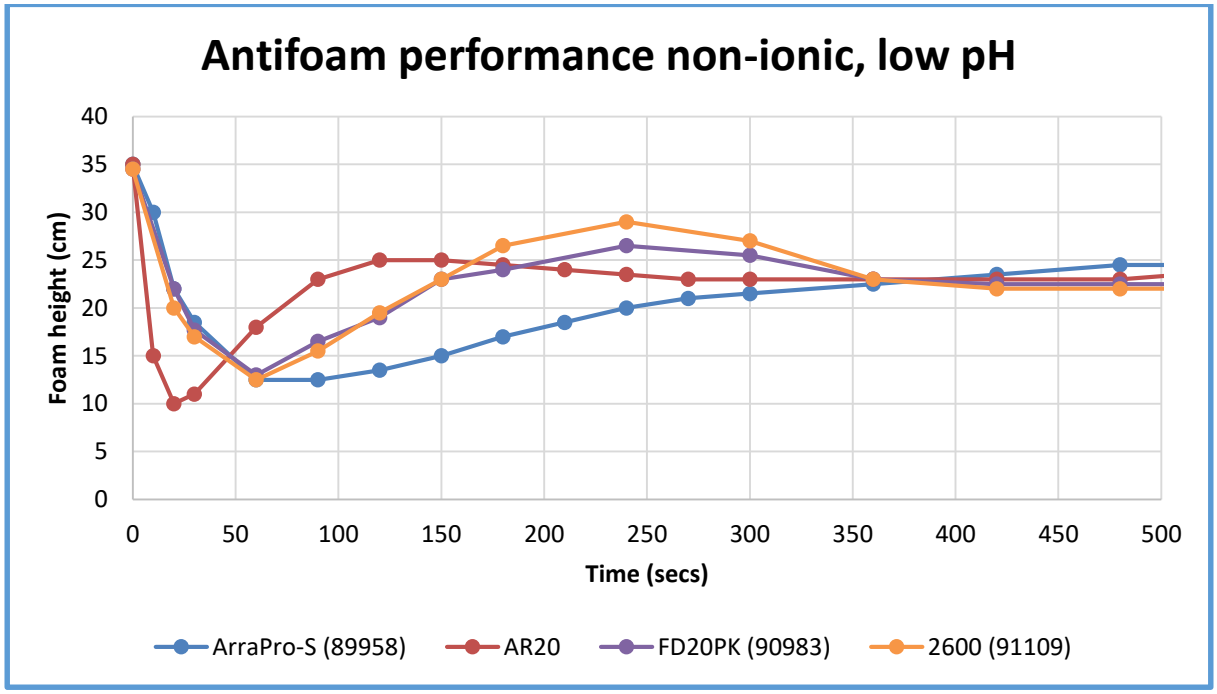

Figure 1: Antifoam performance of ArraPro-S in a non-ionic, low pH media compared to older products.

When the ArraPro-S data is compared to that of older antifoam products it shows the enhanced antifoam performance of ArraPro-S (Figure 1). Whilst AR20 shows a quicker knockdown initially, it is very short lived, rebounding to a higher foam height quicker than all the others. These same trends in data are repeated in the results for the antifoams in Softanol 120 solution at high pH, Figure 2.

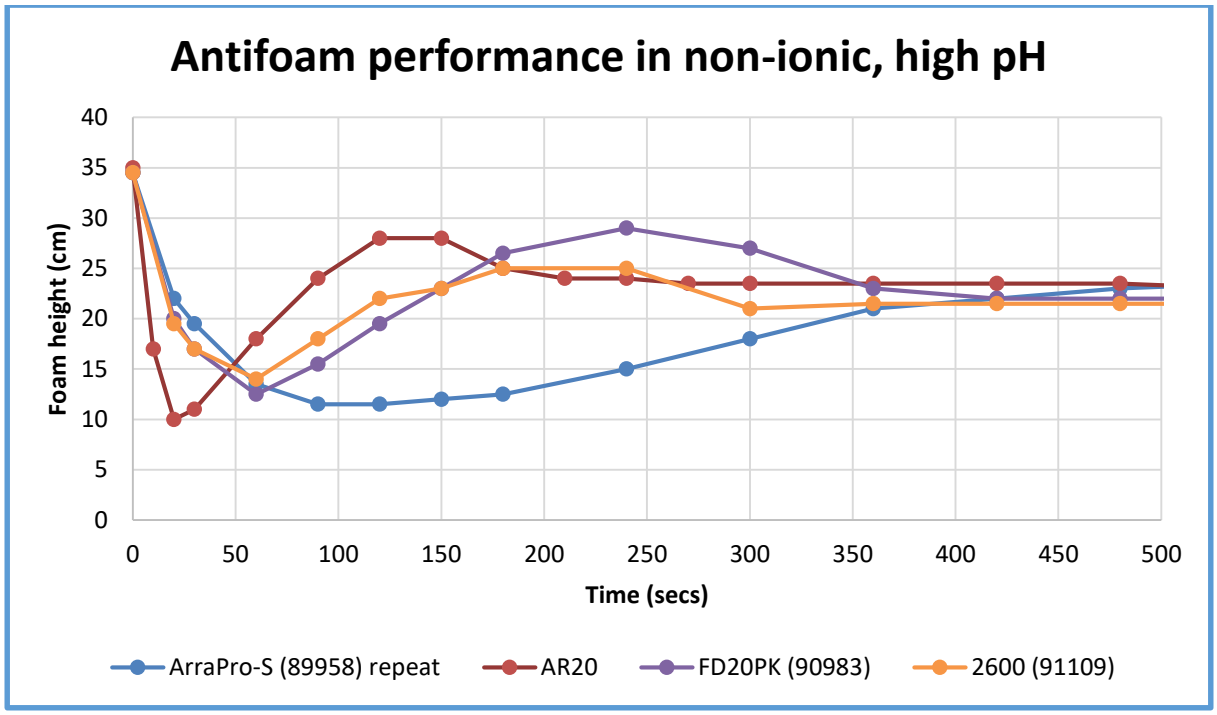

Figure 2: Antifoam performance of ArraPro-S in non-ionic, high pH media compared to older products.

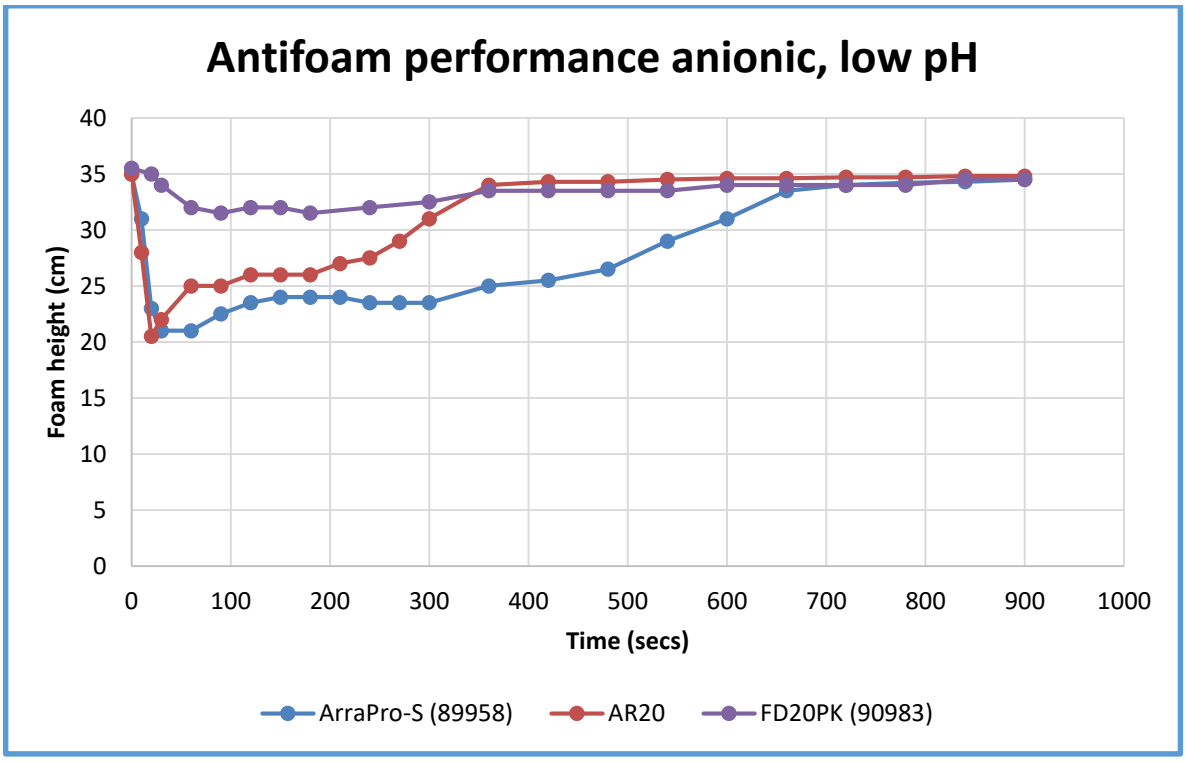

Figure 3: Antifoam performance of ArraPro-S in anionic, low pH media compared to older products.

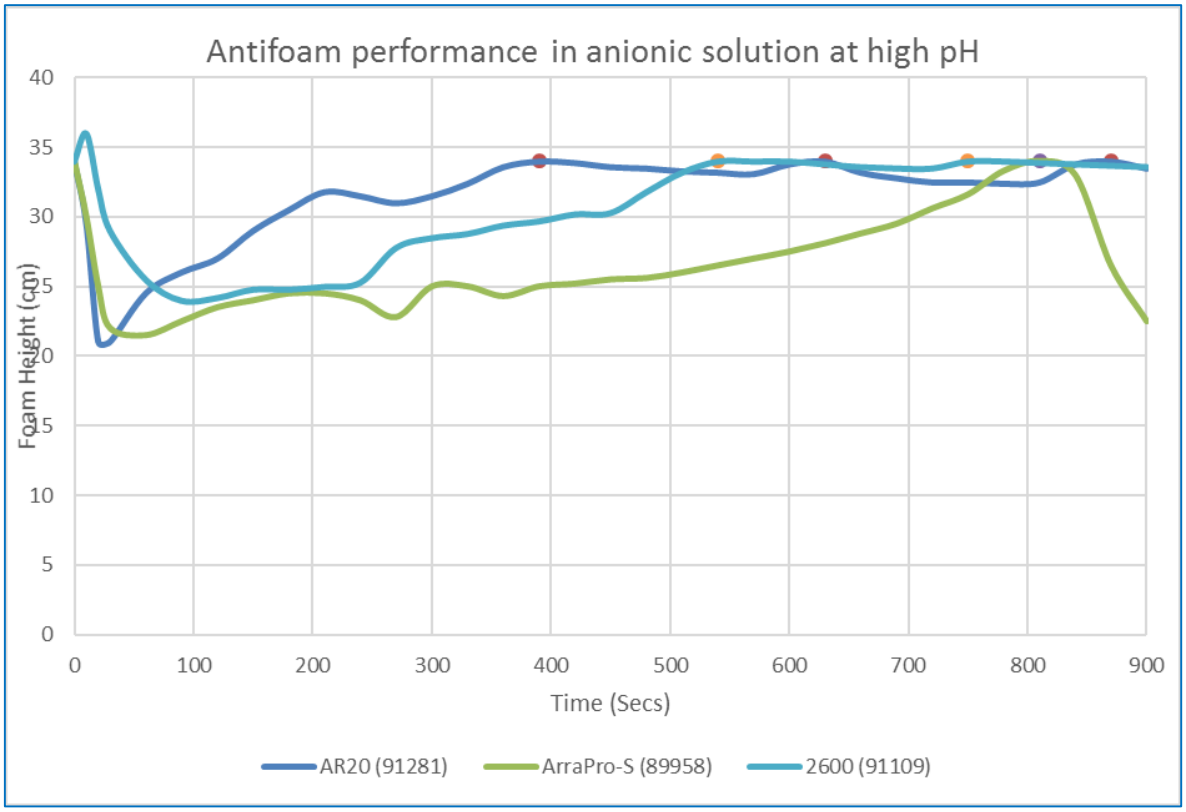

Figure 4: Antifoam performance of ArraPro-S in anionic, high pH media compared to older products. The dose points for each antifoam product are shown as dots on the respective lines.

Figure 3 and Figure 4 demonstrates again the enhanced antifoam performance of ArraPro-S compared to older antifoam products in an anionic media at low and high pH.

As can be seen in Figure 4 the performance of ArraPro-S is superior to the other two antifoams in anionic media at high pH. AR20 and 2600 needed to be dosed 4 and 3 times respectively during the time of the experiment to control foam height. In comparison ArraPro-S only needed 2 doses to achieve the same foam control with the second dose only needed after 810 seconds. This clearly demonstrates is suitability to control foam within this harsh environment.

Conclusion

FoamClear ArraPro-S is a superior new product for the control of foam in agricultural media. The enhanced product can tackle foaming issues in anionic and non-ionic solutions at low and high pH.