



## Retention of SLICE® on medicated feed pellets after exposure to sea water.

(emamectin benzoate)

SLICE® (emamectin benzoate) is a medicated feed premix indicated for the treatment and prevention of sea lice infestations in salmon. When fed at the dose rate of 50µg emamectin benzoate/kg body weight/day for 7 consecutive days, SLICE kills all parasitic stages of sea lice (chalmus, pre-adults, and adults, including gravid females).<sup>\*</sup> Since its introduction over a decade ago, SLICE has established a proven record of reliable field performance and, thus, become the leading product for sea lice control.

To prepare SLICE-medicated feeds, extruded feed pellets are top-coated with the premix and an overcoat of fish oil is then applied to seal it to the feed pellet. Retention of premix on the pellet after exposure to water is required for a successful treatment.

A laboratory study was conducted to investigate potential performance losses (leaching) of SLICE from medicated fish feed pellets in contact with sea water.<sup>1</sup>

### Experiment design

Pelleted salmon feed samples containing known amounts of emamectin benzoate (EB) were sourced from 8 different manufacturing sites (UK, Norway, and Chile) and immersed in sea water for 5 to 30 seconds. Retention of EB in the immersed feed samples was measured, thus allowing calculation of the percent of drug leaching into sea water. Samples of SLICE-medicated fish feed representing a range of commercial pellet sizes were tested:

- UK-1: 6.5mm pellets;
- UK-2: 3mm pellets (vacuum coated);
- Norway-1: 3mm pellets;
- Norway-2: 4.9mm pellets (vacuum coated);
- Chile-1, -2, -3, -4: pellets from 4 different feedmills in Chile.

The feeds were produced using the standard mixing method for SLICE, with the exception of UK-2 and Norway-2 that used a vacuum coating procedure.

Triplicate assays of EB content were performed on 20g samples of dry feed from each source to determine EB levels. Similar assays were then performed on 20g samples of the feed pellets after 5, 15, or 30 seconds immersion in 500ml of sea water. These 'wet' samples also involved assay of EB content in the water and on the filter paper used to dry the feed sample before assay. All assays employed calibrated methods using reverse phase gradient elution HPLC (feed) or LC-MS/MS (filter paper and water) and the triplicate results for each sample were averaged. The total EB content of each wet sample was calculated by adding the amount of EB in the feed, filter paper and water. The percentage of EB in feed, filter paper or water was then calculated relative to the total.

### Results

Excellent rates of EB retention were observed with all sizes of feed pellets (Figure 1) and with both methods of EB application (conventional and vacuum coating). There was only a very small increase in the level of leaching between 5 and 30 seconds immersion in sea water. Retention rates in feed pellets ranged from 99.9-99.0% at 5 seconds, 99.8-98.3% at 15 seconds, and 99.7%-97.3% at 30 seconds.

### Conclusions

Results from this laboratory study confirm that there is negligible loss of EB from SLICE top-coated feeds when immersed in sea water for at least 30 seconds, regardless of the source or size of feed pellet.

<sup>\*</sup>Check your local package insert for details.



FIGURE 1



Figure 1. Distribution of EB (% of total) in feed pellets, filter paper and water after immersion of SLICE medicated feed in sea water for 5, 15 or 30 seconds.

References

<sup>1</sup> MSD Animal Health: SLICE medicated feed leaching study.

SLICE® is only available via your animal prescriber or veterinary surgeon from whom advice should be sought.

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Further information including side effects, precautions, warnings and contraindications is available on the product SPC or datasheet or from MSD Animal Health UK Limited. Registered office Walton Manor, Walton, Milton Keynes MK7 7AJ, UK.

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