

Executive Summary

Following successful trials of novel antifouling coatings in Norway in 2001, further trials were initiated in 2002. Treatments (i.e. coatings) trialled included the copper-based coating Netrex, two prototype versions of Wattyl's NetClear, and two experimental furanone-based coatings. Trials were done at salmon farms at three sites: Hjelmeland in Rogaland, Nærøy in Trøndelag, and Dønna in Nordland. Three sizes of trial materials were coated and deployed: commercial-scale salmon nets (60 m; Hjelmeland), smaller (5 X 5m; Nærøy and Dønna), and small (0.5 X 0.5 m) net panels (all sites).

The 2002 effort produced unsatisfactory results. These trials were complicated by practical difficulties including coating nets with NetClear and the inability to deploy all treatments at the same time at a given site. Thus in some instances direct comparisons between different coatings were difficult to make. Nonetheless, the overall conclusion drawn from the 2002 trials was that none of the coatings (including Netrex) on whole nets or panels satisfactorily inhibited fouling for the duration of the trial (~ 5 mo). Contributing to this conclusion was the heavy fouling ("worst in ten years") and the unusually warm water temperatures experienced at all sites. It was also concluded that the problems experienced in coating and handling the NetClear nets needed remedying.

The lack of performance of the coatings in 2002 differed markedly from our 2001 results and prompted reformulating NetClear in an attempt to customize the product to Norway's environment. As such, trials recommenced in 2002/2003 in New Zealand with net panels employing new NetClear formulations. These new formulations were designed to increase fouling deterrence by optimising release rates of the active ingredient and to improve coating properties. In May 2003, these new formulations were trialled on coated net panels at research sites in Nærøy and Rogaland.

The new formulations trialled in New Zealand demonstrated exceptional performance. In Norway, the 2003 results were also extremely encouraging. The new coatings performed extremely well at the Nærøy site in 2003 with several of the formulations remaining completely unfouled after 4.5 months. The performance of these coatings equalled that of NetWax, the commercial copper-based coating currently in use, and performed significantly better than the version of NetClear used in 2002, which was also trialled in 2003. Coatings immersed for 4 months at the site in Rogaland also performed very well, again equal to NetWax and significantly better than the original version of NetClear. A separate set of coated panels that had been immersed in Sydney Harbour for 2 months prior to deployment in Norway for 4.5 months were also trialled. These coatings had begun to fail by October (after 6.5 months total immersion).

In summary, the new formulations appear to meet the criteria needed for a commercially viable coating for farms in mid- and northern Norway. The ability of the coatings to last a full season at southerly sites such as Rogaland is more uncertain. Therefore, the following two steps are necessary to continue the NetClear formulations trials in Norway during the 2004 fouling season:

- 1) Commercial-scale (whole) net trials at mid- and northern sites, and;
- 2) Further development and sample net trials of formulations suitable for southern sites.