

Final report on assessment of
the risk of chemical runoff
following use of Gazelle SG as a
pre-treatment and top-up spray
in forestry

Tom Nisbet and Huw Thomas
Forest Research
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Summary

A detailed study of acetamiprid runoff following the use of Gazelle SG as a pre-treatment and top-up spray in forestry was undertaken at Esgair Gors in mid-Wales. The site was specifically selected to pose a high risk of chemical runoff, comprising a high elevation, headwater catchment with stagnopodzol soils and subject to high rainfall. The 2.7 ha restock was planted with nursery-treated (sprayed) trees on 9th and 17th April 2018, followed by two top-up sprays on 10th April and 13th September 2019. Standard, good forestry practice was employed for all chemical treatments.

Water samples were collected before, during and after each treatment from six points around the site. All treatments were preceded by wet weather, while conditions were relatively dry on the treatment days and the following five-ten days. Thereafter, rainfall and flow conditions varied between treatments, from light to moderate showers after planting and the first top-up spray to heavy rainfall after the second period of spraying. The sample points comprised a mix of forest and road drains below the site and the main receiving stream. A nearby stream acted as a control. Samples were frozen on the day of collection and stored until analysis by NRWAS using the latest analytical techniques.

Only one of the 90 water samples collected detected acetamiprid at levels above the Limit of Quantification of 5 ng/l. This single sample was taken from the road drain immediately below the restock site on the second day of planting the treated trees. The recorded concentration of 102.2 ng/l was relatively low and 20% of the PNEC value. Observations strongly suggested that the source of this limited contamination was wash-off of residues from the tree sapling bags; these had been gathered up and temporarily placed next to the sampled road culvert. The contamination appeared to be retained in the ~3 m buffer area below the road culvert and did not reach the local stream via the receiving forest drain, which was separated by a 10+ m buffer. Neither of the top-up spray applications resulted in water contamination at any of the sampling points.

The results show that the good forestry practice measures employed were effective in preventing contamination of stream waters. This indicates that the measures are fit for purpose on high risk sites and both the planting of treated trees and top-up spraying can be safely undertaken on sites draining to sensitive waters. However, the recorded 'light' contamination of surface runoff in the road drain shows that further tightening of practice regarding the placement and handling of the sapling bags on site would help to ensure zero chemical runoff. It is recommended that additional guidance is provided requesting planting teams avoid placing the sapling bags, including empty bags, within or immediately adjacent to road drains, even if drains appear dry at the time. The study findings reinforce the need to quickly gather up and remove bags from planted sites. Operator feedback on the potential for minor spillage from powder drift during mixing or the blow out of nozzles while spraying should be considered to minimise the risk posed.