



Chemical Weed Control University Research Project

PROJECT FACTS

Project Scope

The Alaska Railroad Corporation (ARRC) has commissioned the University of Alaska Fairbanks (UAF) to conduct a multi-year study on the migration and retention of specific herbicides in Alaska. Involving small test sites on ARRC property (track right-of-way or yards), the study expands on UAF's ongoing herbicide research. The purpose is to collect scientific data to evaluate the use of herbicides AquaMaster® and Oust Extra® and the surfactant AgriDex® as part of an integrated railroad vegetation management program.

UAF's Alaska University Transportation Center (AUTC) is particularly well-suited to conduct the research as the recognized expert on transportation safety and herbicide behavior along transportation corridors in Alaska. AUTC has conducted similar studies for ADOT/PF over the past few years.

The research began in 2008 with several test plots on the railroad's south end, between Portage and Seward. Research continued in 2009 to include test plots on ARRC's north end in Fairbanks and a 500-foot section along the 19-mile Eielson Branch track. UAF farm test plots are also included. Some test sites have wells and lysimeters to monitor and measure the presence and movement of the chemicals. The test sites combined do not exceed 20 acres.

Benefits

- UAF research compliments other studies to evaluate herbicide behavior in Alaska.
- ARRC obtains valuable information to answer questions raised about the safety of herbicide use along the rail bed.

Project Status

- **Year One (2008):** Started August 2008. Includes two 16-by-200-foot patches (one in Seward Yard and one along the track 25 miles south of Seward) with both Aquamaster and Oust Extra applied. The nonionic surfactant (non-herbicide) Agri-Dex® was used to help to apply the herbicides more effectively. The patches included multiple wells and lysimeters installed to monitor chemical migration and degradation. The 2008 south end effort includes another two sites approximately 16 feet by one mile (located at about 39 and 45 miles north of Seward) with only Aquamaster applied and no test wells to be used primarily to observe weed control performance. None of the four test sites on ARRC land encompass open water bodies. A fifth site is located on UAF property.
- **Year Two (2009).** Started July 2009. Two 200- to 500-foot sections of track (one along the mainline track traversing the UAF Experimental Farm and one along the Eielson Branch) where AquaMaster® and Oust® Extra were applied along with Agri-Dex®. Each section included a 16-by-200-foot patch with wells and lysimeters. Sections do not encompass water bodies.
- **Sampling and Results (2009 - 2011):** South end test sites were sampled in spring 2009. Preliminary results in June 2009 showed herbicides behave the same as in other climates and regions. Sampling at north end test sites occurred in spring and summer 2010, and preliminary results are expected during winter 2010-11. Final results and study conclusion is scheduled for 2011.

Project Cost

- **2008-2009:** \$200,000 with \$100,000 funded by ARRC and the remainder by an AUTC grant.
- **2009-2011:** \$200,000 with \$100,000 funded by ARRC and the remainder by an AUTC grant.

