

SEEDS Project Update

Fall 2014



SEEDS Project
Plant the Seed



About SEEDS

The Seed Enhanced Ecological Delivery Systems (SEEDS) project is funded by the Canadian Oil Sands Innovation Alliance (COSIA). The project seeks to develop and test new seed delivery mechanisms for establishing a range of shrubs and herb species on disturbed sites. A central objective is to test whether ‘pucks’ that contain seeds and act as microsites can be used to cost effectively establish shrubs and herbs on reclaimed sites.

Four Recipes Selected

After testing a range of ingredients in a total of 100 different ‘recipes’, the project team has narrowed the list down to the top four performers. The four recipes were selected based on their ability to quickly take up moisture, while also having the ability to hold that moisture for long periods of time. The pH and overall chemistry of the pucks also contributed to the recipe selection.

The four selected recipes also showed excellent strength and stability, which is optimal for puck storage and transporting.



Next Steps

The team is busy developing ~750 pucks and will be establishing a controlled outdoor experiment this fall within the city of Edmonton. The experiment is designed to replicate a fall field placement of the pucks, and to monitor how well seeds germinate and pucks hold together following the spring 2015 thaw. The team is also testing a variety of seed coatings to improve performance of the pucks, and will be completing a variety of freeze-thaw tests to ensure optimal puck performance and seed germination.

Testing Soils and Germination

Now that the recipes have been selected, the team is determining which recipe promotes the highest levels of germination. Blueberry, dogwood, black spruce and green alder seeds are all being tested to determine how well they germinate and establish in the different pucks (previous image).

Another critical factor being investigated is whether the roots of plants that germinate in the pucks will penetrate the underlying soil – as opposed to being restricted to the puck.



The pucks have been placed on two different soil types (clay loam and sand) to determine if soil medium has any impact on puck performance (above). By the end of the experiment, the team hopes to further narrow the puck recipe and better understand how the recipes impact germination and early establishment of plants.