Organic Preventative Measures against the Germination of Musk Thistles

Reiff, Amanda
Tolsma, Devin

Every year farmers spend time and money on eliminating infestations of musk thistles in their pastures. Some farm animals may eat the thistle, but cattle will not because of thorns. Alfalfa produces a chemical which over time inhibits other alfalfa plants from growing. We will determine if this “autotoxicity” property of alfalfa can be captured in water, which has been filtered through soil from an alfalfa field, and used to prevent seed germination of musk thistles. In the fall, seeds from the heads of musk thistles and a sample of soil from a well-established alfalfa field were collected. Then we mixed the soil with distilled water, and collected the filtrate. We germinated the seeds in the window sill in petri dishes and used the filtrate to dampen one set of seeds. Another set of seeds was dampened with common tap water to be used as a control. Initial results show that the treated seeds had a lower germination rate than the control. The benefit of doing this experiment lies in the possible discovery of an organic chemical that can be applied to pastures to prevent the germination of thistles.