

Nebraska and Ohio Ground Ivy Population Response to 2,4-D

Eric Kohler and Clark Throssell

Objective

The objective was to determine the relative tolerance of two ground ivy populations to 2,4-D.

Rationale

Previous work had shown that ground ivy populations can vary in their response to 2,4-D. The NE ground ivy population was much more tolerant than the OH population to an application of 2,4-D at 4 lbs ai/A. It is unknown if this relationship is true over a wide range of 2,4-D rates. This experiment was designed to ascertain the relative level of 2,4-D tolerance between two ground ivy populations.

How It Was Done

Ground ivy populations were grown in 7 inch diameter pots containing a 5:3 soil:peat mix under greenhouse conditions for at least 6 months prior to treatment. The NE and OH ground ivy populations were treated with 1, 2, 3, 4, 6, 8, 10, and 12 lbs ai/A 2,4-D (amine) using an air-pressurized spray chamber in a carrier volume of 4 gallons/1000 sq ft. Visual ratings of phytotoxicity on a scale of 0 to 100% with 0 and 100% being uninjured and dead, respectively, were taken at 25 days after treatment.

Results

The OH ground ivy population was more severely injured than the NE ground ivy population (Figure 1).

While the OH ground ivy population was nearly dead at 6 lbs ai/A 2,4-D, the NE ground ivy population needed 12 lbs ai/A 2,4-D to achieve the same level of injury. Based on analysis of the data, the NE population is approximately 1.7X more tolerant to 2,4-D than the OH population.

When presented with the problem of a 2,4-D tolerant weed, one might assume that increasing the rate of herbicide used would allow for better weed control. While we do see more injury as the rate of 2,4-D is increase, it would take at least 12 lbs/A to kill the NE population. This represents 6X the labeled rate for Kentucky bluegrass. A better and safer solution would be to use another herbicide product instead.

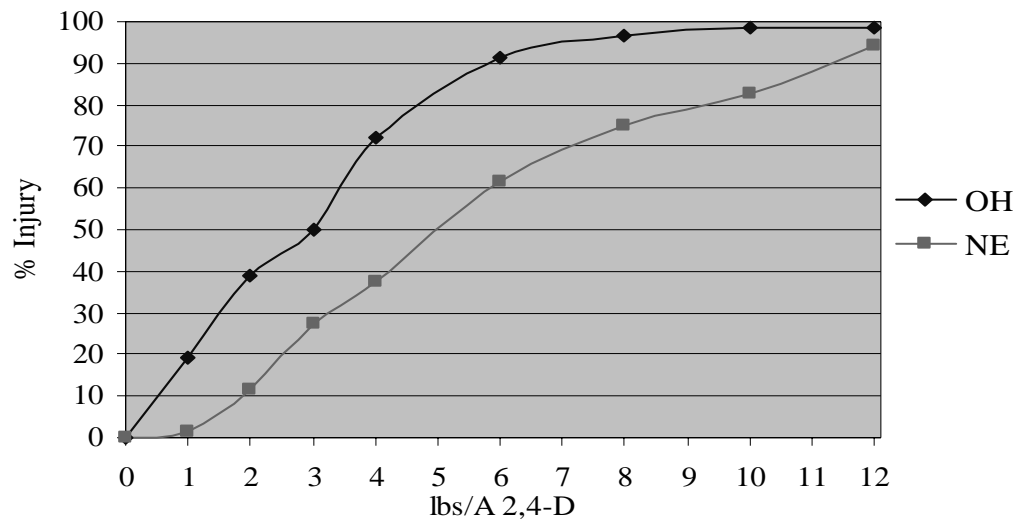


Figure 1. The effect of 2,4-D on two ground ivy populations.