

Project Findings Report for Paul C. and Edna H. Warner Interdisciplinary Grant

Vinegar As an Organic Herbicide in Naturally Grown Blueberry Production

Participating farmer: Daniel Greenfield, Greenfield Berry Farm

Project leader: Brad Bergerfurd, OSU Extension Educator 2

Project collaborator: Katie Myers-Griffith, Countryside Conservancy

Project Description

Managing weeds on a small-scale, economically sustainable, pick-your-own blueberry farm using concentrated vinegar (i.e., 12% acetic acid) as an herbicide.

Findings

The project began in late June 2012 with the first application of 25 gallons of 12% vinegar to the weeds surrounding 1000 row feet of 7-year-old naturally grown blueberry plants. The process was repeated three more times at two- to three-week intervals. The first application was applied with a backpack sprayer. However, this method proved to be cumbersome and time consuming as the sprayer was heavy and had to be refilled often as it holds only four gallons. For the remaining applications, I switched to a larger 15-gallon motorized pump sprayer pulled by a garden tractor and wagon, which allowed me to cover more area in less time.

Within hours of treatment, there was noticeable weed die back. Broadleaf weeds (such as thistle, lambs-quarters, red sorrel, garlic mustard, and purslane) seemed to be the most affected. Grasses were also killed by the vinegar but were the quickest to grow back. Within 24 hours, there was complete burnback of the weeds surrounding the blueberry plants. There seemed to be a correlation between heat and dryness and the effectiveness of the vinegar. The hotter and drier the weather, the more quickly and effective the vinegar worked. I checked the extended forecast before every treatment to ensure not to lose any effectiveness of the vinegar due to a rainfall. Noticeable regrowth appeared to start within two to three weeks of treatment.

The treatment was significantly helpful in curbing weed growth and bought me time to attend to other farm tasks without needing to hoe or manually weed the treated blueberry beds. The summer of 2012 was a particularly hot and dry year, and weed growth was slower than usual. Nonetheless, the weeds remained in constant need of attention in the untreated rows. This project and its findings are significant because left unattended, weeds have a negative impact on blueberry bush growth and development. They negatively impact the blueberry plants by shading them, competing for nutrients, and promoting disease.

Based on my findings so far, I believe that vinegar can be an effective part of an integrated weed management system in naturally grown blueberry production. This project has been extended for an

additional year, so the research will continue this season. This coming year I want to continue the research by expanding the use of vinegar to determine its efficacy under more normal weather patterns.

Expenses To Date

Item	Expense
100 gallons of vinegar	200.00
Backpack sprayer	114.51
Wagon sprayer	103.98
Labor (10 hours per application, 4 applications)	600.00
Total	\$1018.49

Education

The process, progress, and findings of this project will be presented to the other Countryside Initiative Farms at our business meetings. We will also share our findings with other farmers at the Ohio Ecological Food and Farm Association (OEFFA) annual conference this February during the presentation of our blueberry workshop. We also plan to shoot a video of the application process and show the results. Finally, we will discuss and share our results to groups and individuals who visit the farm this summer.