

SHARING OUR ROOTS

Acres of Innovation

EFFECT OF THE USE OF AGRICULTURAL VINEGAR AS A NATURAL HERBICIDE AND OF SUSTANE 4-6-4 AS AN ORGANIC FERTILIZER IN THE PERENNIAL CULTIVATION OF HAZELNUTS

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The idea for this concept came from the need to present management alternatives for hazelnut production in the poultry-centered regenerative agriculture system that Sharing Our Roots leads.

METHODS

A total of three treatments were run:

T1 was fertilized using sustane 4-6-4 sustane (dose of 150 g.) on two occasions: during transplanting and one month after transplanting. Next, a total of four applications of organic herbicide were applied to the hazelnuts base. The mixture for the first two applications was 10 liters water + 9 liters agricultural vinegar + 1 liter of citric acid (avenger). The mixture of last two applications was 10 liters water + 10 liters of organic agricultural vinegar. Applications were made after the initial transplant at rates of: 20 days, 35 days, 56 days and 77 days after.

T2 was fertilized the same way as T1, but with no herbicide applications.

T3 was under a single application of cattle compost as a nutritional basis. A single application of wood chips to prevent weed germination and received mechanized weed control a total of 10 times.

During mid-fall, data were taken from 100 randomly selected plants from each of the three treatments. Data gathered included measuring the height of the plants, taking the diameter of the plants, and observing the percentage of flowering of the plants evaluated.

RESULTS

Hazelnut plants under the T1 treatment yielded better records of height, diameter and flowering. On average, T1 plants were six inches taller than T2 and 11 inches taller than T3 plants. Similarly, a wider stem diameter was observed from T1 plants compared to other treatments. Plants were 0.31 in thicker in T1 than T2 and 0.43 in thicker than plants in T3. Additionally, T1 presented 100% more flowering than T2 and 800% more than T3.

In terms of costs, the cost per acre under the T1 treatment was \$ 1,598.00 including the four applications of natural herbicide, the two applications of organic fertilizer with sustane 4-6-4 and labor for all activities. The cost of T2 was \$ 237.00 per acre including the cost of the two fertilizer applications 4-6-4 and the labor cost of these two activities.

DISCUSSION & FURTHER RESEARCH

It is recommended to continue with this evaluation until the third year of establishment of the hazelnut crop, as well as continuing with the fertilizer applications. It is recommended to make a wood chip application in the evaluated plants of T1 to reduce the number of natural herbicide applications every year until the third year. Additionally, conducting a soil analysis in the third year of this evaluation in the area of T1 to see if there are any negative effects on the pH of the soil from having made several applications of acetic acid.

