The Effect of Nano Pro on Varying Concentrations of Glyphosate Efficiency

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Glyphosate is one of the world's most widely used broad-spectrum herbicides, accounting for roughly 25 % of the world herbicide market. Glyphosate herbicide is widely utilized in agriculture because it is cost-effective, easy to use compound that kills weeds, especially annual broadleaf weeds and grasses competing with crops. however, there are some who argue that it is toxic to the environment and human health at the levels that it is now being used. In order to obtain a plausible relief to this controversy, a test was crafted to conduct an experiment in which various concentration levels of Glyphosate would be tested for efficiency in controlling weeds on a fence line and in Round Up Ready sweet corn production. The concept of this investigation was to determine if lower concentrations of Glyphosate could be applied with the use of organic acid adjuvants acting as chelators, Humic and Fulvic Acids, for effective weed control. It was hypothesized that differing concentrations of Glyphosate and mixtures with the organic acids would have no effect on the weed control. Nine different applications were applied to weeds along a fence row and in a Round UP Ready sweet corn field. Forty-five (2 ft2) spray zones (5 replicas of each treatment) were laid out along a field fence and similarly in the sweet corn field. Using a 41 % Glyphosate product, concentrations to be tested were mixed at 1/4%, ½ % and 1%. Glyphosate concentrations to be tested were also mixed at 1/4%, ½ % and 1% and with Humic/ Fulvic acid so that the spray solution contained 3.2 % Humic/Fulvic Acid (Acid ratio was 1:1 in the solution). Control test plots were no spray, water only, 3.2 % Nano Pro only. Each spray concentration was applied (sprayed to wet) to five test areas. Plots were analyzed for wilt and weed elimination at 5 and 21 days. Soil samples were taken from under the test plots and colonies of fungi and bacteria cultured to determine the effect of the spray on the microbial life (soil health). In conclusion, the hypothesis was not supported. The 3.2 % organic acid solution exhibited the ability to increase or accelerate the control of weeds utilizing 8 times less Glyphosate concentration than the recommended 2 % spray solution amount. That calculates to reduction in application of Glyphosate from 52.8 oz. /acre to 6.6 oz. /acre. In addition, the fungi and bacterial population increased with the use of 3.2 % organic acid solution in conjunction with Glyphosate application.

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