PRE-PLANT APPLICATIONS OF SODIUM AZIDE FOR CONTROL OF NEMATODES AND WEEDS IN EGGPLANT PRODUCTION.

R. Rodriguez-Kabana, Department of Entomology and Plant Pathology, Auburn University, Auburn, Alabama 36849.

The efficacy of pre-plant applications of NaN_3 for control of plant parasitic nematodes and weeds was studied in a microplot experiment using the aqueous Agrizide^{TM} formulation of the chemical. The square microplots were open-bottom, each one ft^2 [929 cm^2] and two feet [61 cms] deep delimited by a terra-cotta chimney flue. Soil was a sandy loam [pH= 6.2; organic matter content < 1.0%; C.E.C < 10 meq/100 g soil] infested with the nematodes: *Meloidogyne incognita* [root-knot], *Paratrichodorus minor* [stubby root], *Tylenchorhynchus claytoni* [stunt], and *Helicotylenchus dihystera* [spiral]. Weeds in the plots were principally crabgrass [*Digitaria sanguinalis*], yellow nutsedge [*Cyperus esculentum*], pigweed [*Amaranthus* spp.], and morning glories [*Ipomea* spp., *Jacquemontia tamnifolia*]. NaN_3 was applied by drenching [2L/plot] at rates of : 0, 0.5, 1.0, 1.5, 2.0, 3.0, 4.0, and 5.0 g/plot. The plots were covered with standard polyethylene [1 mil] and after 10 days the cover was removed, the number of weeds was determined, soil samples for nematological analyses were taken and each plot was planted with two 3-week old 'Black Beauty' eggplant [*Solanum melongena*] seedlings. The plants were grown for 2 months and data were collected on yield, weed infestation and nematode populations. There were no nematodes in the planting time samples from plots treated with NaN_3. In contrast, soil from control plots were infested with all nematode species. At planting time there were no weeds in plots treated with all but the two lowest rates of NaN_3. Yield and number of fruits increased directly in response to NaN_3 rates from 0-1.5 g/plot and leveled out with no additional increases obtained in response to higher rates. At the end of the experiment there were no plant parasitic nematodes and no significant weed infestation in plots with the three highest rates of the chemical but there were significant populations of the parasites and weeds in plots treated with $\leq$ 2.0 g NaN_3 rates.