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CHEMICAL SOIL TREATMENTS FOR DISEASE-WEED CONTROL IN TOBACCO BEDS

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Annual treatment of tobacco bed soils with specified chemicals makes it possible to control root knot and weeds, and to use the same bed site many years. It is practical to use two chemicals at the same time, one for control of nematode diseases and one for weeds. Two practical combinations for light Georgia soils are (1) EDB-40* or D-D mixture* for nematodes plus granular calcium cyanamid for weed control, and (2) urea (Nu-Green) plus cyanamid. A third method consists of gassing with methyl bromide which controls both weeds and soil-borne diseases. Each method has some particular advantage over the others, depending on soil type and location, weed species prevalent, severity of disease, and over-all costs. *EDB-40 is 40 percent ethylene dibromide; D-D is dichloropropene-dichloropropane mixture.

Preparation of Soil for Chemical Treatment

To prevent excessive weed increase, keep the site free from objectionable plants during the summer and do not let them go to seed. Cut down weeds in the surrounding area to prevent seeds from blowing in after treatment. In September or at least two weeks before treating, harrow or disk the soil several inches deep. Do not use a turnplow. If compost is to be used this is the time to apply it. Remove clods, roots and litter. The soil should be well loosened and pulverized before treating. Drag harrows and weeders are good tools for leveling before and after treating. Dig ditches on the upper side to control drainage water.

1. Soil Fumigation plus Cyanamid

Approximately 3 pints of EDB-40 or D-D mixture plus 100 to 150 pounds of cyanamid are required for each 100-square yard area. Apply both materials 60 to 90 days before seeding, preferably in cool weather and after a shower when the soil is moist, but not too wet to plow. The same type of gravity flow rig for applying fumigants in the field will be satisfactory. First adjust the applicator to deliver 1/2 pint of fumigant to each 140 feet of furrow. Apply the liquid 7 to 10 inches deep in small scooter furrows 12 inches apart, and smooth the surface with a weeder. The cyanamid may be applied immediately afterward or, if preferred, several days later. Broadcast 100 pounds of cyanamid uniformly on the surface and harrow this thoroughly into the top 2 or 3 inches of soil. The more mixing the better, provided this is not done deeper than 3 inches. If weeds are expected to be severe, apply an additional 50 pounds of cyanamid per 100 yards and scratch this in with a weeder only 1 inch deep. Do not disturb the soil again until time for applying fertilizer. At seeding time apply only 1 pound of fertilizer per square yard. CAUTION: To avoid plant stunting, apply the fumigant BEFORE using cyanamid. If nematode diseases are known to be absent, cyanamid may be used alone at the above rates for weed control.

1/ In cooperation with Bureau of Plant Industry, Soils & Agricultural Engineering, U. S. Department of Agriculture, and the University System of Georgia.
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