Killing Weed Seeds in the Grass Seedbed By
the Use of Fertilizers and Chemicals

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The removal of weeds from seedbeds, newly planted turf, gardens, and field crops, whether by hand or by cultivation, requires time and expense. Various chemicals and fertilizers have been applied to soils contaminated with weed seeds in a series of studies carried on for several years in the greenhouse and field at the Rhode Island Agricultural Experiment Station. Results of these experiments indicate the practical use of such chemicals and fertilizers for killing weed seeds in soils prior to planting turf or other crops.

Materials are available which will destroy weed seeds in the seedbed, leave little or no toxic residue for future plantings, and at the same time add fertility to the soil, thus saving much time and money involved in weeding and maintenance.

REVIEW OF LITERATURE

Abbott (1) reported that “Aero” Cyanamid, applied in the fall at the rate of 1 pound per square yard and worked into the soil to a depth of 5 inches, effectively prevented germination of weed seeds in tobacco plant beds.

Welton and Carroll (7) stated that applications of Cyanamid at the rate of 20 pounds per 1,000 square feet and worked into the surface soil gave fairly satisfactory control of many of the more common weeds, such as the chickweeds, shepherd’s purse, milk purslane, dandelion, and others. For the plantains and many of the annuals, like foxtail and crabgrass, however, 40 pounds per 1,000 square feet did not give complete control, although most of the seeds were killed.

DeFrance (4) reported the successful use of organic and inorganic nitrogenous fertilizers for destroying weed seed in compost, and suggested that the method was practical and economical from the greenkeeper’s standpoint because both sterilized compost and fertilizer could be applied as topdressing in one operation.

Carr (3) reported that the weed population in tobacco beds was reduced 87% with 1 pound of Cyanamid per square yard, and that a 60- to 90-day period should elapse after treatment before it is safe to seed. A superior growth and stand of tobacco plants was obtained on treated soil.

An anonymous (2) mimeographed paper from the Georgia Coastal Plain Experiment Station states, “Treatment of plant bed soil with a combination of Uramon (urea) and Cyanamid (calcium cyanamide) 60 to 90 days before seeding eliminates 70 to 95% of weed growth, partially controls root knot, and insures superior growth and stands of tobacco plants. Either chemical may be used alone, but a combination of the two is more effective than either used separately and 100 pounds of Uramon plus 50 pounds of Cyanamid is suggested for each 100 square yards. If Cyanamid is used alone, 100 pounds of this will be necessary.”

For treating tobacco beds, Henderson, Matthews, and Jenkins (6) suggested the use of 1 pound of either Uramon or calcium cyanamide or a combination of 1 pound of Uramon and ½ pound of calcium cyanamide per square yard of plant bed area, and stated that the treatment would not give complete control of weeds, but

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3 Figures in parenthesis refer to “Literature Cited”, p. 535.