WATER-SOLUBLE TAPE FOR SPECIALIZED PLANTING ARRANGEMENTS IN FIELD AND GREENHOUSE EXPERIMENTS

P. K. Lawrence, M. A. Brinkman, R. Shorter, and K. J. Frey

WATER-SOLUBLE, polyethylene oxide tape is used for sowing commercial vegetable crops in California (1). The seed is arranged at specified intervals on a long, narrow strip of tape, and the tape is “planted” to sow the crop. The method permits precision planting, has given more uniform seedling emergence, and allows seed orientation. The polyethylene oxide tape (obtainable from Union Carbide Corporation, Creative Agricultural Systems, 1328 Burton Avenue, Salinas, CA 93901) is available in long rolls and in various widths up to 30 cm. It is stable under normal temperature and moisture conditions but dissolves in 60 to 90 sec when placed in moist soil (approximately at field capacity). Early tests indicated that polyethylene oxide tape leaves no harmful residues in the soil and is not phytotoxic (1).

We have used water-soluble tape for planting small, specialized, field experiments of small grains. Figure 1 illustrates three planting arrangements. The first two were used in studies of competition between oat genotypes, in which it is necessary to identify the genotypes at harvest time, and the third was used in growth analysis studies in which uniform emergence was required.

Arrangement of seed on the tape is a simple procedure. First, a plan of the particular planting ar-

---

2 Research Associate, Research Assistant, Research Associate, and Professor of Plant Breeding, respectively, Agronomy Department, Iowa State University, Ames, IA 50010.

Fig. 1. Examples of specialized planting arrangements that can be easily and precisely planted by the use of water-soluble tape: (1) spacing between seed samples was 5.0 cm, and each sample can be a different genotype; (2) diameter of circle of seeds was 7.5 cm, and resulting seedlings in center of circle were measured for competitive ability with genotype in circle; and (3) seeds were 1.0 cm apart, with tape attached to a wire-mesh screen to facilitate planting and harvesting.

---

OVERSEEDING SMALL GRAIN IN STANDING SOYBEANS VS CONVENTIONAL PLANTING METHODS

J. G. Clapp, Jr.

ABSTRACT

Rye (Secale cereale L.) and wheat (Triticum aestivum L.) were overseeded in a soybean (Glycine max (L.) Merrill) crop on both Coastal Plain and Piedmont soils. This method of seeding enables the small grain crop to be planted at an optimum time rather than being subjected to a possible delay in planting caused by a late soybean harvest and/or wet fields. Rye and wheat grain yields were 53 and 75% higher, respectively, for overseeding than for late plantings.

Additional index words: Grain yields, Test weight, Aerial seeding, Seeding rate, Glycine max (L.) Merrill, Secale cereale L., Triticum aestivum L.

THE conventional method of planting small grain crops after soybeans (Glycine max (L.) Merrill) has been to prepare a seedbed by plowing and/or disking followed by seeding with a grain drill. Delays in seeding the small grain crop are often encountered because the soybean variety used matures later than the optimum planting date for small grain. Wet fields may also prevent the soybean crop from being harvested on time, which will delay preparation of the small grain seedbed.

The practice of overseeding rye (Secale cereale L.) in soybean fields has been used successfully by a number of livestock producers to provide a source of winter grazing. These producers, located in coastal areas where soil moisture and humidity are high, have been successful in obtaining desirable stands of rye and

---

2 Associate Professor of Crop Science, North Carolina State University, Raleigh, NC 27607.