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TETRAPLOIDY IN *MELILOTUS ALBA* INDUCED BY COLCHICINE

I. J. JOHNSON AND J. E. SASS

Seedlings of sweet clover were treated with colchicine. Plants that responded to treatment either were tetraploid in all new root tissues, or had sectors, or islands of tetraploid tissue in the root tips. Cutting made from the plants in the latter category were tetraploid throughout. After the tetraploid condition is established, it can be maintained by vegetative propagation. Tetraploid plants are partially self-fertile, although considerable differences of self-fertility were found among clones originating from different treated seedlings.

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THE VARIABILITY IN THE COLOR OF RED CLOVER SEEDS, ITS CAUSE, AND RELATION TO THE VALUE OF THE SEEDS

JOHN N. MARTIN

Red clover seed samples almost invariably are of three principle colors, violet or purple, yellow, and brown. The brown seeds have been pretty well proven to be considerably inferior in quality to the seeds of the other colors. Some investigators have shown the purple to be superior to the yellow both in germination and vigor of plants produced, while other investigators have data to show that the yellow seeds are equal to or superior to the purple or violet seeds.

The seeds of seven strains of Swedish origin, of six strains recommended by the U. S. Department of Agriculture and of four Iowa strains long grown on the same farms were studied as to the proportion weights, and germination of their different colored seeds.

The percentages of each color varied considerably in the same strain in different years and varied also with age of seed, and ripeness at the time of harvesting.

The percentage of brown seeds ranged from zero to 65 percent. The brown seeds were inferior in weight and in germination. The highest percentage of brown seeds was in the Kentucky strains recommended by the U. S. Department of Agriculture.

The percentage of purple or violet seeds in the different samples ranged from 16 to 62 and percentage of yellow ranged from 12 to 62. The purple and violet were slightly heavier than