The triploid embryos formed in crosses between diploid and tetraploid plants would, in a great majority of cases, abort or produce extremely shrivelled seeds. As a result, a higher seed set would be expected from the diploid than the tetraploid where a mixture of pollen grains of two ploids is used for pollination. However, in this study, Tetra Petkus was about 4 to 5 days later in heading than Emerald and Imperial. Therefore, only heads of late tills of the diploids were used for interpollination with the main spikes of Tetra Petkus. These late heads usually were smaller and produced less pollen than the main spikes. Thus there probably were more pollen grains from Tetra Petkus than from the diploid variety in the pollen mixture. If so the greater fertility reduction in the diploid would be expected. Ellerström and Hagberg have demonstrated a greater decrease in seed set in diploid than in tetraploid when the diploid plants were outnumbered by the tetraploid plants in a mixed population.

To study the effects of interpollination on seed plumpness and germination, all the kernels were classified into 3 groups: (1) plump, (2) partially shrivelled or intermediate, and (3) shrivelled, and seed of these classes were tested for germinability. Results are presented in table 2.

Only when Tetra Petkus was interpollinated with the diploid varieties was there a significant increase in percentage of shrivelled kernels. The shrivelled seeds generally had lower germinability than the plump ones. This was especially true in Tetra Petkus seed produced from interpollination. The decrease in percentage of germination was not significant in any case, however.

It is evident from these results and those reported previously that diploid and autotetraploid rye varieties must be grown separately for successful production. The minimum isolation distance required is not known.—F. K. S. Koo, Department of Agronomy and Plant Genetics, Institute of Agriculture, University of Minnesota, St. Paul, Minn.

3. Dry materials usually are pressed flat or mashed state. Frozen material comes out of the freezer about as good condition as it was put in.

4. By quick freezing, growth of different species and of specific parts of a species can be stopped at a particular stage of material in question. This is satisfactorily done with dry material.

There are many receptacles which have been commonly used are approximately quart-size and wide mouth. Freezer bags 8 by 3 by 15 inches have been very satisfactory. The freezer bags most commonly used are approximately quart-size and wide mouth. Freezer bags 8 by 3 by 15 inches have been very satisfactory. The freezer bags are convenient. It has been found very desirable to use one freezer bag for each laboratory period, since the material cannot be successfully frozen again after thawing. This is especially true when the laboratory is scheduled on different days rather than at different times of the same day.

Some of the plant materials which have been frozen for laboratory use at University of Illinois include: (a) and spikelets of rye, wheat, and barley, (b) spikelets of oats, (c) auricles of the grasses, (d) spikelets of corn, (e) immature ears of the corn culm, (g) the corn root system, (h) legume seedlings, flowers, pods, inflorescences, and leaves, and (i) various diseased parts of agronomic plants.—A. W. Burger, Agronomy, University of Illinois Agr. Exp. Stat.

DOES NITROGEN SOURCE AFFECT THE PALATABILITY OF COASTAL BERMUDAGRASS?*1

Following the report showing that nitrogen affects the palatability of Coastal Bermudagrass,*1 questions were raised concerning the effect of nitrogen source upon the palatability of this grass. Unverified reports suggested that cattle preferred grass fertilized with one source of nitrogen to that fertilized with another source. The general observation that cattle shunned pastures suggested that urea might adversely affect the palatability of the grass. This experiment was conducted to investigate these questions.

The technique used in the earlier study of this investigation. Ammonium nitrate, ammonium sulfate of ammonia, and urea were applied at rates of 100, 200, 400, 800, and 1,600 pounds of nitrogen to a well established sod of Coastal Bermudagrass. The nitrogen was applied on the 5th of March, the 21st, and the 29th of June. Phosphorus and potash were applied in sufficient quantities to be adequate for the study. Plots 6 x 20 feet in size were used.

USE OF FROZEN PLANT MATERIALS IN THE CLASSROOM LABORATORY1

An important aid in the Crops Laboratory, especially in beginning agronomy courses, is the use of plant materials to illustrate and demonstrate the botany of normal common crop plants. Having seen normal plants, it becomes easier to teach symptomology and appearance of damaged parts affected variously by diseases, insects, and other adverse environments. One of the best places of preserving and storing plant materials in a more or less natural state is an upright freezer.

One of the most common methods of storing harvested plant materials is freezing. After harvest, plants are dried or kept in a cool dark place until needed for the laboratory. Drying is not very satisfactory, however, and the best method of preserving plant materials is freezing. A few of the plant materials which are frozen, nearly all of the color is preserved.