Notes

PURPLE STRAW COLOR IN RELATION TO KERNEL WEIGHT IN WHEAT

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formation concerning any relationship between individual plant characters and yield or other quantitative characters is of real value to the plant breeder in his selection work. Purple color in corn was found to be associated with low dry weight of ears per plant and also with low mean kernel weight. Worzella, however, found no correlation between purple straw color and kernel weight in two wheat crosses he studied.

In the wheat breeding program at the North Carolina Agricultural Experiment Station a cross was made in 1941 between Purplestraw, C.I. 1915, and Carala, C.I. 12184, for the purpose of studying the relationship between straw color and kernel weight and yield. The two varieties are similar in head type, maturity, and yielding ability. Purplestraw, as the name suggests, usually shows a purple pigmentation in the straw. In some seasons the color is better developed than in others.

The F₂ plants showed a predominance of purple types, while the F₃ progenies showed 35 purple, 67 segregating, and 43 white-strawed lines. Those lines which appeared to be homozygous were bulked into two groups, purple and white, and tested in three subsequent years. For the tests single rod-row plots were used, with 10 replications the first year and 20 in each of the other two. Data on weight per 1000 kernels and on yield per acre are given in Table 1.

The data show that in each of the 3 years the purple-strawed types produced kernels which were significantly heavier than were those from the white lines. In 1 year only was a significant yield difference found.

Since total plant weight was not taken and no chemical analysis made, no explanation of the results is attempted, but the data are given as a matter of record.

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Table 1.

<table>
<thead>
<tr>
<th>Year</th>
<th>Purple</th>
<th>White</th>
<th>Purple</th>
<th>White</th>
<th>Purple</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg.</td>
<td>26.8</td>
<td>20.4</td>
<td>-1.2</td>
<td>0.8</td>
<td>-1.2</td>
<td>0.8</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td></td>
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</tbody>
</table>

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THE USE OF RELIEF MODELS IN SOIL SURVEYORS

Relief models are helpful in training soil surveyors not only to understand how soils occur in typical landscapes, but also how they are recorded on a two-dimensional map. The models are helpful teaching aids in regions where the winters are long and severe, and where surveyors are trained indoors before the field season.

The soil mapping procedure described is familiar to experienced soil mappers, but some detail to explain the training process is not accustomed to think in terms of soils.

A COMPARISON OF THE FUNCTIONS OF BLOCK AND RELIEF MODELS IN SOIL SURVEY

Block diagrams have been used in bulletins (1, 5, 8) to help readers understand soil occurrence. A flat soil map actually represents the landscape. The block diagram distorts the relationships of the soil by introducing the horizontal dimension. The diagram shows on the sides of the block the nature of the subsoil layers and the underlying rock.

Relief models facilitate the reverse process of sketching onto a flat map of soil boundaries, features, and culture as found on an irregular landscape. The block diagram distorts the relationships of the soil map by introducing the horizontal and vertical dimension. The diagram shows on the sides of the block the nature of the subsoil layers and the underlying rock.

Practice with the model teaches the beginning surveyor to eliminate the effect of perspective and the vertical dimension, as he draws features which he observes on hillsides and in valleys. Soils are identified and mapped in the classroom by examining samples of surface soil and displayed in trays with numbers corresponding to site numbers on the relief model.

CONSTRUCTION OF THE RELIEF MODEL

A variety of materials can be used in constructing relief models: papier maché, plaster, cardboard, plastic, clay, and various mixtures of materials (4, 6, 7, 9, 10). The writer prepared relief models of some typical landscapes in the United States.