Table 3. Computer costs for calculating and summarizing data from four cuttings of a 100-plot legume-grass experiment.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Time and rate</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Punch and verify cards</td>
<td>3 hours at $12.00</td>
<td>$36.00</td>
</tr>
<tr>
<td>Transfer data to tape</td>
<td>.02 hour at $65.00</td>
<td>$1.30</td>
</tr>
<tr>
<td>IBM 704 machine run</td>
<td>.06 hour at $310.00</td>
<td>$18.60</td>
</tr>
<tr>
<td>Print results in tabular form</td>
<td>.02 hour at $45.00</td>
<td>$0.90</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$44.40</strong></td>
</tr>
</tbody>
</table>

Since the program is inclusive enough to handle a large variety of forage experiments, summary sheets sometimes include unnecessary data tables. These can be discarded and the sheets containing useful data filed as a permanent record of the experiment.

The approximate cost of performing the calculation and summary work for four cuttings of a 100-plot legume-grass experiment is shown in Table 3.

Perhaps the most important advantage of using computerized data processing is the virtual elimination of calculation errors. The only errors which exist in the summarized data are those associated with initial collection and recording of data on the work sheets. Other advantages include elimination of routine data processing work for the researcher, elimination of the need for training clerical help to process data, and completion of data processing shortly after the last harvest in the fall.

The primary disadvantage is that data are not available during the growing season for early evaluation of results. Most efficient operation dictates that all data be processed at one time at the end of the experimental year.

FURTHER STUDIES ON PLOT TECHNIQUES WITH BIRDSFOOT TREFOIL

John D. Miller and E. James Koch

This paper presents two additional years' data on a study previously published. We believe that the additional data verify earlier results, and add considerable accuracy to earlier estimations of optimum plot size, row width, and need for border rows. Relevant literature was cited in the earlier publication.

Objectives and research methods having been outlined in the previous publication, they will be only briefly mentioned.

Single-row plots 24 feet long were seeded to 'Viking' birdsfoot trefoil. The Viking center row was bordered on both sides by 1 row of 3 varieties: Viking, strain 33-64 which is also erect; and a decumbent variety, 'Empire'. The experiment consisted of four replications of a split-plot design. Row spacings in widths of 8, 16, and 24 inches were whole plots, and border varieties constituted the split plots.

At hay stage the center row of Viking was harvested in four 5-foot sections. Forage was dried and weighed by individual sections. Data were taken from 1959-1962, but only two replications were harvested in 1962. Results for 1959-61 were combined for all replicates, and for only two replications were harvested in 1962. Results for 1959-62 were combined for two replicates only. The technique developed plots. !

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