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F. E. Ryan

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SUDAN GRASS IS DROUGHT RESISTANT

By F. E. RYAN, B.Sc. (Agric.), Agrostologist

While maize and fodder sorghums are recommended for green fodder in dairying areas, the most suitable plants for summer grazing are Sudan grass and Japanese millet. Both can be sown on the majority of soils occurring in the dairying areas, providing ploughing is commenced sufficiently early in the spring. If sown in October or November, either of these plants will provide grazing for stock during January and February and if soil moisture supplies are adequate, will continue growth during March and April.

Sudan grass is the more popular of the two, but the choice between them depends on individual preference. Generally, Japanese millet will give a bulk of fodder if not severely grazed, while Sudan grass is reputed to recover better after grazing. During the 1954-55 and 1955-56 summer seasons, trials were carried out at Denmark Research Station to compare the growth of these two plants and also to compare them with sweet Sudan grass which has recently become available from Queensland.

TRIAL IN 1954-55

The summer season at Denmark during 1954-55 was mild with a dry period in January and February and heavy falls of rain in March. The three species, commercial Sudan grass, Japanese millet and sweet Sudan grass were sown in replicated plots and grazed at four to five weekly intervals. Four grazings were obtained in January, February, March and April.

Commercial Sudan grass produced the greatest amount of fodder, but not significantly more than Japanese millet. The Sudan grass made better early growth and was much more productive in April after three grazings had been obtained.

The millet produced more bulk at the second grazing in February, but then declined relative to the Sudan grass at the last two grazings.

Sweet Sudan grass was the least productive of the three, but was able to recover well after three grazings and was more productive in April than the Japanese millet. The air-dry yields for this experiment are shown in the following table:
SUDAN GRASS AND JAPANESE MILLET GRAZING EXPERIMENT, 1954-55.

**Average Air Dry Yields.**

<table>
<thead>
<tr>
<th>Species and Varieties.</th>
<th>1st Cut, 18-1-55.</th>
<th>2nd Cut, 22-2-55.</th>
<th>3rd Cut, 21-3-55.</th>
<th>4th Cut, 28-4-55.</th>
<th>Combined Grazing Cuts.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Sudan Grass</td>
<td>13.97</td>
<td>8.17</td>
<td>10.20</td>
<td>5.38</td>
<td>37.72</td>
</tr>
<tr>
<td>Sweet Sudan Grass</td>
<td>7.20</td>
<td>7.67</td>
<td>7.92</td>
<td>4.17</td>
<td>26.96</td>
</tr>
<tr>
<td>Japanese Millet</td>
<td>10.17</td>
<td>12.90</td>
<td>8.20</td>
<td>1.66</td>
<td>32.93</td>
</tr>
</tbody>
</table>

**TRIAL IN 1955-56**

The experiment was repeated during 1955-56. The season during the last summer was very different with hot dry conditions during January and February, during which the plants were affected by drought conditions. 290 points of rain were recorded for March and this improved growth considerably. Both Sudan grass and Japanese millet made reasonably good growth early in the season, but because of the dry conditions this was considerably less than had been obtained in the previous year. Sweet Sudan grass was the least productive of the three. At the second cut in February, commercial Sudan grass was found to be more successful under the drought conditions than the other two and its recovery in March following the rains was very much better than either the Japanese millet or the sweet Sudan grass. The combined yield from the three grazings proved Sudan grass to be superior to Japanese millet and both were more productive than sweet Sudan grass. These results are shown in the following table.

**Average Air Dry Yields.**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Sudan Grass</td>
<td>5.30</td>
<td>3.12</td>
<td>7.75</td>
<td>16.17</td>
</tr>
<tr>
<td>Japanese Millet, Commercial</td>
<td>5.90</td>
<td>2.32</td>
<td>3.45</td>
<td>11.67</td>
</tr>
<tr>
<td>Sweet Sudan Grass, SS6</td>
<td>2.76</td>
<td>2.24</td>
<td>4.24</td>
<td>9.24</td>
</tr>
</tbody>
</table>
CONCLUSION

In these trials Sudan grass was shown to be more drought-resistant than either Japanese millet or sweet Sudan grass and in the milder season of 1954-55, it was more productive than either of the other two varieties. In a normal season, Sudan grass is just as productive as Japanese millet and more productive than sweet Sudan grass (SS6) whilst in a dry season, Sudan grass was shown to be much more drought-resistant than Japanese millet and more productive than sweet Sudan grass.

These trials have also shown that Sudan grass can withstand grazing somewhat better than Japanese millet.

COMMENT

Insufficient attention has been given to growing of summer crops for grazing on dairy farms. They can assist in lengthening the lactation period and assisting in production of more butterfat per cow and greater annual output from the farm.

In choosing a suitable site, best results can be expected on soils which retain their moisture throughout the summer months, or where irrigation can be used and on these areas Japanese millet or Sudan grass may be used, as both are capable of giving very high yields of green material under these conditions.

On soils which are unable to retain their moisture throughout the whole of the summer, early spring ploughing will help to conserve moisture, which is available to the crop later in the year. For such a site Sudan grass is more drought-resistant and will respond to any summer rains which fall. The area which can be sown with Sudan grass is thus much greater than that suitable for Japanese millet.

ACKNOWLEDGMENT

I wish to thank the Manager of the Denmark Research Station, Mr. V. Weston and his assistant Mr. A. James, who carried out the work on these trials.

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