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The lambs on the left were born in August and those on the right in April. It is obvious which ones are more likely to survive the lean time before the season breaks. The photograph was taken in October.

Lambing Trials at Abydos Research Station

By H. SUIJDENDORP, B.Sc. (Agric.), Regional Adviser, North-West Branch

Abydos Research Station is halfway between Port Hedland and Wittenoom Gorge. It is in country of granitic origin that is largely covered with spinifex (mainly *Triodia pungens*) and associated species.

The average rainfall is about 12 inches, most of which falls in January and February and some light falls in May-June. This year the rainfall was only six inches, mainly in January-February and June.

Burning and Deferred Grazing

It is common practice to burn the spinifex when it is dense enough to carry a fire. If burnt shortly before the wet season and if grazing is deferred until about six weeks after good opening rains, seedlings of many native perennials will germinate and establish themselves. The resulting sub-climax vegetation will provide enough nutrition for lambing ewes for a limited period each year. The plant cover then reverts back mainly to spinifex about four years after burning. This period of fair nutrition each year varies with the type of season, but generally will run out by August-September.

Naturally this basic pattern of available nutrition is the main limiting factor when selecting a suitable time for lambing.
Lambing Trial

The results of a recent lambing trial at Abydos are shown in the table below:

Grazing was deferred in all but one group. This involved running stock in an all spinifex paddock for six weeks from the break of the season, after which they were returned to the original paddocks.

These comments are made for each group in the trial:

**Group A**

Joined October 1, but mating did not start until October 27. Eighty-six per cent. of the ewes were mated in the next 10 days.

Severe losses immediately after lambing (27 per cent.) were due to dessication in high temperatures (110° F. maximum) in April.

Nutrition during April was still good, as shown by the good daily weight gains (0.47 lb.) of the surviving lambs. Weight gains were calculated between lambing and marking time about three weeks later.

Fourteen per cent. of the ewes mated but did not conceive during the two months allowed for the mating period. Most of them conceived later in the summer. The reason for this is not known.

**Group B**

The groups of the November mating were joined in mid November, and most of them were mated early in December. In this group an all spinifex paddock was burnt immediately before the summer rain and lambs were dropped on spinifex seedlings (*Triodia pungens*) and "tarbush," (*Boerhavia* spp.).

This type of vegetation was inferior to the spinifex associated with other perennial grasses in the other experimental paddocks. The lambs however were reared successfully on this plant cover (81 per cent. weaned).

This opens up possibilities for stations with not much breeding country; they can make sure of higher lamb survival by reserving burnt soft spinifex country for lambing ewes.

**Group C**

Maximum temperatures usually fall by about 20° F. towards the end of April, allowing good lamb survival from a May drop. Weight gains were not so good in this group because of the dry vegetation. However this offers the best compromise when selecting for good nutrition and reasonable temperatures.

**Group D**

Except for continuous grazing the conditions in this group were the same as group C. The continuous grazing however adversely affected lamb survival (20 per cent. loss) and also the daily weight gains and fleece weights of the ewes.

**Group E**

Some rain fell in May-June giving a useful boost to this group. However the effect did not last long and the vegetation dried off rapidly. This explains the high losses (29 per cent.) before weaning.

**Group F**

Conditions are even more severe at this time. Lower weaning percentages are recorded in this group as well as the lowest weight gains in this series of experiments.

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### LAMBING TRIAL—1961-62

<table>
<thead>
<tr>
<th>Mating Time</th>
<th>Grazing System</th>
<th>Total Ewes</th>
<th>Lambed</th>
<th>Marked</th>
<th>Weaned</th>
<th>Late Lambing</th>
<th>Daily Weight Gain</th>
<th>Wool (Mid-August)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A October</td>
<td>Deferred</td>
<td>41</td>
<td>83</td>
<td>56</td>
<td>51</td>
<td>14</td>
<td>0.47</td>
<td>6.6</td>
</tr>
<tr>
<td>B November</td>
<td>Burnt and Deferred</td>
<td>36</td>
<td>95</td>
<td>89</td>
<td>81</td>
<td></td>
<td>0.32</td>
<td>5.7</td>
</tr>
<tr>
<td>C November</td>
<td>Deferred</td>
<td>48</td>
<td>92</td>
<td>90</td>
<td>88</td>
<td>4</td>
<td>0.36</td>
<td>5.8</td>
</tr>
<tr>
<td>D November</td>
<td>Continuous</td>
<td>40</td>
<td>98</td>
<td>80</td>
<td>78</td>
<td></td>
<td>0.27</td>
<td>4.6</td>
</tr>
<tr>
<td>E January</td>
<td>Deferred</td>
<td>39</td>
<td>92</td>
<td>74</td>
<td>63</td>
<td></td>
<td>0.35</td>
<td>5.8</td>
</tr>
<tr>
<td>F March</td>
<td>Deferred</td>
<td>39</td>
<td>80</td>
<td>74</td>
<td>54</td>
<td>2</td>
<td>0.25</td>
<td>6.5</td>
</tr>
</tbody>
</table>
Stocking rates for all of the treatments were the same with one sheep to five acres. This is four to five times heavier than the usual rates for this region.

Conclusions

It seems quite clear that the time of lambing is the most important factor determining survival and growth of lambs in the spinifex region.

Lambing in May clashes with the present shearing season and may present some difficulties. However it seems obvious that some effort should be made towards lambing at this time.

The experiment also showed that if recently burnt country is reserved for ewes lambing in May, the lambs can be reared on relatively low grade country.

Deferred grazing is essential to maintain production in this region. This is shown by the disastrous effects of continuous grazing for only one season on country that had been deferred grazed for four consecutive years.

Acknowledgments

All observations on lambing performance have been made by Mr. Collett.

Some sheep for this experiment are on loan from Mundabullangana and Warra-long stations.

Finance for vermin-proofing of the experimental paddocks at Abydos was provided by the Wool Research Committee.

WINDOW SPACE FEATURED IN PLANNING NEW FARM MACHINERY BUILDING

SO IMPORTANT is the need for adequate lighting—both natural and artificial—in modern farm buildings, particularly workshops, that it must be given high priority when deciding on the design of machinery buildings.

Mr. J. G. J. Drever, New South Wales Department of Agriculture engineer, said that in the workshop section of a machinery building there must be at least one square foot of window for each ten feet of floor space.

He said plenty of windows were required on the side opposite the doorway and on the end wall of the shed.

Windows should also be provided above work-benches.

In the machinery storage part of the shed, windows provide light at the back of the machines.

This is of great value when servicing machinery on wet days.

Complementary

Mr. Drever said that fullest use of natural lighting was complementary to the general availability of electricity to rural holdings.

Lighting outlets should have at least 100-watt lamps, with enamelled steel reflectors, and be mounted along the centre line of the building no more than 20 feet apart.

Over each work-bench a 60-watt lamp in an enamel steel reflector should be suspended.

At least one outlet in the workshop and the storage section must be available for a portable inspection lamp, and fitted to a 32-volt transformer for safety.

Individual switches for each light should be placed at the entrance, for general lighting.

Localised lighting switches placed where convenient, save considerable time.

Portable lamps need to be strongly made for rough handling with tough rubber cables, and metal parts earthed.

A waterproof light above the concrete apron in front of the workshop makes possible work after dark.

When positioning the portable lamp socket, keep it close to the apron, and to the greasing pit.

For general lighting on the underside of machines at night, permanent bulkhead fittings can be mounted on the wall about 12 inches above the ground.

—N.S.W. Department of Agriculture.
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