GRAZING HABITS OF DAIRY CATTLE

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Maximum returns from any pasture depend upon cropping practices conducive to growth response of plants, and upon cattle management to avoid waste. The inter-relationship of these two primary factors and the need for proper balance between the two in pasture management are apparent. Combination of rotational grazing with clipping, fertilizing, etc., are typical attempts to consider both major factors. Many conditions influence the system of cattle management adopted, such as short time pasturage daily to make limited pasture go further, night pastures, etc. Grazing habits of cows are of interest from the standpoint of the wellbeing of both the cattle and the pasture.

GRAZING HABITS OF MILKING COWS DURING DAYTIME

Comparative time spent in grazing by milking cows on six different pastures was recorded. Two cows were used on each pasture. The pastures averaged about four acres. Observations were taken for three consecutive days on each pasture, but not concurrently. The observations covered a 12-hour daylight period for the first two days and 11 hours the third day, or an average of 11 hours and 40 minutes per day. Records were kept on the time spent in grazing, number of times each cow lay down, and the number of times each cow drank.

Summarization of results (table 1) showed the cows spent slightly less than half the time in grazing while on good pasture. Four different pairs of cows on four different good pastures averaged practically the same time spent in grazing, the variation being from 46 per cent of the day to 50 per cent, or a maximum difference between the groups of only 20 minutes in approximately five and one-half hours. One pair of cows was pastured on a field of mixed brome grass and alfalfa which was not uniform in stand. It was rated as fair pasture because it appeared to have less feed on it than the better pastures. Another field rated as poor pasture consisted of short wheat. On the fair pasture the cows spent 56 per cent of the time grazing and on the poor pasture 62 per cent of the time. Compared with an average of 5.6 hours of grazing on the four good pastures, the grazing time on fair pasture was 6.5 hours and 7.3 hours on poor pasture. Thus the cows spent 31 per cent more time grazing on the poor pasture than the average on the good pastures. Whether this difference would have been even more pro-

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### TABLE 1

*Grazing habits of dairy cows on several pastures—daytime only*

<table>
<thead>
<tr>
<th>No. cows</th>
<th>Height inches</th>
<th>Variety</th>
<th>Quality</th>
<th>No. in trials</th>
<th>Av. time grazing</th>
<th>Ave. No. drinks</th>
<th>Av. time not grazing</th>
<th>Ave. No. times lying down</th>
<th>Ave. total daily hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>4-15</td>
<td>Rye</td>
<td>Good</td>
<td>3 2</td>
<td>5.4 46</td>
<td>3 6.3</td>
<td>54 6</td>
<td>3 11.7</td>
<td>11.7</td>
</tr>
<tr>
<td>2</td>
<td>4-15</td>
<td>Rye</td>
<td>Good</td>
<td>3 2</td>
<td>5.4 46</td>
<td>3 6.3</td>
<td>54 6</td>
<td>3 11.7</td>
<td>11.7</td>
</tr>
<tr>
<td>2</td>
<td>4-15</td>
<td>Rye &amp; vetch</td>
<td>Good</td>
<td>3 2</td>
<td>5.7 49</td>
<td>4 6.0</td>
<td>51 3</td>
<td>3 11.7</td>
<td>11.7</td>
</tr>
<tr>
<td>4</td>
<td>4-12</td>
<td>Brome &amp; alfalfa</td>
<td>Good</td>
<td>3 4</td>
<td>5.8 50</td>
<td>4 5.9</td>
<td>50 4</td>
<td>4 11.7</td>
<td>11.7</td>
</tr>
<tr>
<td>4</td>
<td>4-10</td>
<td>Brome &amp; alfalfa</td>
<td>Good</td>
<td>3 4</td>
<td>6.5 56</td>
<td>4 5.2</td>
<td>44 2</td>
<td>2 11.7</td>
<td>11.7</td>
</tr>
<tr>
<td>2</td>
<td>2-3</td>
<td>Wheat</td>
<td>Poor</td>
<td>3 2</td>
<td>7.3 62</td>
<td>4 4.4</td>
<td>38 2</td>
<td>2 11.7</td>
<td>11.7</td>
</tr>
</tbody>
</table>
nounced had the cows been on the pastures constantly with no supplementary feed is not known.

While on pasture the cows drank an average of from three to four times during the day with no apparent relationship to quality of pasture. This would indicate the importance of having water readily available in the pastures for milking cows. The cows lay down an average of four times daily on good pastures and only two times daily on fair and poor pastures. This indicates that the cows had more difficulty getting their fill of grass, but whether there is any relationship with the time spent in ruminating in proportion to the amount of feed ingested, or in utilization of feed is unknown.

**GRAZING HABITS OF DRY COWS AND HEIFERS CONTINUOUSLY ON PASTURE**

A more complete study of grazing habits of dairy cattle was made with a group of 56 dry cows and yearling heifers being pastured on a 30 acre field of Balbo rye (3). The pasture was excellent, the herbage being 6 to 10 inches high. The animals remained on the pasture constantly and received no supplementary feed. The animals were kept under constant watch and the numbers grazing, not grazing, and lying down were recorded at five minute intervals for three consecutive 24-hour periods. A heavy rain for several hours interrupted observations on one day. A period (April 10–14, 1940) was selected when the moon was about half full in order that night counts could be made without distracting the cows with a light.

**TABLE 2**

<table>
<thead>
<tr>
<th>Grazing habits of dry cows and heifers continuously on pasture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grazing</td>
</tr>
<tr>
<td>Hrs.</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td><strong>Twelve-hour day and night</strong></td>
</tr>
<tr>
<td>Daytime</td>
</tr>
<tr>
<td>Nighttime</td>
</tr>
<tr>
<td>24-hr. ave. total</td>
</tr>
<tr>
<td><strong>Fourteen-hour day and ten-hour night</strong></td>
</tr>
<tr>
<td>Daytime</td>
</tr>
<tr>
<td>Nighttime</td>
</tr>
</tbody>
</table>

Summarization of the results (table 2) showed that the animals grazed an average of 7.0 hours, or 29 per cent of a 24-hour period. The animals spent an average of 4.0 hours, or 17 per cent of the time in walking or standing without grazing, and 13.0 hours, or 54 per cent of the 24-hour periods in lying down. When the 24-hour period was divided into two 12-hour periods, 6:00 A.M. to 6:00 P.M. for daytime and the similar hours for night,
the time the animals spent in grazing averaged 4.3 hours, or 36 per cent of
the day period; and 2.7 hours, or 23 per cent of the night period. Since the
sun rose at 6:00 A.M. and set at 7:00 P.M. during the trials, a 14-hour day-
light period of from 6:00 A.M. to 8:00 P.M. inclusive would be a more typical
daylight feeding period and 8:00 P.M. to 6:00 A.M. would more nearly repre-
sent night conditions. Comparisons of the grazing habits of the animals on
an average 14-hour day and 10-hour night showed that they grazed 40 per
cent of the time in daytime and 16 per cent of the time at night. They spent
25 per cent of the daytime and only 4 per cent of the night walking or stand-
ing. The animals were lying down 35 per cent of the daytime and 80 per
cent of the night.

The average of 7 hours in 24 spent in grazing is in reasonable agreement
with the report of 8 hours found by Johnstone-Wallace (2), with milking
cows on different types of pastures. His report that cows spend as much
time grazing at night as in the daytime is not supported by the results of
this investigation. The time spent in grazing during the day time of this
trial (29 per cent) is less than reported for milking cows (46-62 per cent)
in table 1, but the differences in pasture, the effect of pasturing during day-
time only, and the differences between milking cows and dry cows may ac-
count for longer grazing periods in the former trial. The fact that these 56
animals averaged 54 per cent of the 24-hour periods lying down is in agree-
ment with the reports of Fuller (1) who found that cows fed in stanchions
during winter averaged 50 per cent of the time lying down. He also re-
ported that the cows spent an average of 5.95 hours eating, or 25 per cent of
the 24-hour period; and 8.1 hours ruminating, or 34 per cent of the time.
Woodward (4) reported that cows on good pastures consumed a maximum
of 150 pounds of grass daily. From these facts it would seem cows on poor
pastures not only must spend more energy in obtaining sufficient food but
that the normal time spent in ruminating may be involved.

Detailed study (fig. 1) of the grazing habits of the cows showed that the
animals tended to have about four primary grazing periods during the day-
time. The first period began about 5:30 A.M. and lasted approximately two
and one-half hours. Another feeding period began about 10:00 A.M., or
slightly before, and lasted from an hour to an hour and a half. The third
feeding period began between 12:30 and 1:00 o'clock and continued for
about two hours. The fourth daylight grazing period began about 6:00
P.M. and continued until about 8:30 P.M.

The night period was considered between 8:30 P.M. and 5:00 A.M. Dur-
ing the night the cows had two primary feeding periods, one from about
9:30 P.M. to 11:00 P.M. and another from about 1:00 A.M. to 3:30 A.M.
Thus, it appeared that the animals as a group tended to fill about six times
in 24 hours, four times during daylight and twice during the night. In the
daytime the entire herd tended to graze as a complete unit or lie down as a
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group, but at night the lower peaks in grazing numbers with periods less sharply defined indicated more individual action by the animals.

These observations are of interest in pasture management because the cows tend to graze less in night pastures than in daytime pastures. It is also interesting to note that the herd does not fill before the time when the average herd is brought into the barn for the morning milking. This would

![Graph](image-url)

Fig. 1. Observations on 56 dry cows and heifers continuously on pasture, with the number grazing, standing and lying down indicated throughout 24-hour periods.

indicate that in summer management of cows earlier milking might be desirable if the cows are to get a complete fill after milking before the flies and heat interfere with grazing habits. These data were obtained in April when the climate was ideal for cow comfort. What effect heat and flies during mid-summer days would have on grazing habits is not known.

**Summary and Conclusions**

Comparative time spent in grazing by milking cows on six different pastures during the daytime was recorded. On good pasture the cows spent slightly less than half the time in grazing. On fair pasture the cows spent 55 per cent of the time grazing and on poor pasture 62 per cent of the time. Compared with an average of 5.6 hours of grazing on good pastures, the grazing time on fair pasture was 6.5 hours and 7.3 hours on poor pasture. Thus, the cows spent 31 per cent more time in grazing on poor pasture than on good pasture. The cows drank an average of from three to four times during the day with no apparent relationship to quality of pasture. The cows lay down an average of four times daily on good pasture and only two times daily on fair and poor pasture.
A more detailed study of 56 dairy cattle on Balbo rye pasture constantly with no supplementary feed showed that the animals spent an average of 7 hours grazing, 4 hours standing or walking, and 13 hours lying down during a 24-hour period. Comparison of a daylight period of 14 hours with a night period of 10 hours showed that the animals grazed an average of 40 per cent of the time during the day and 16 per cent during the night. They spent 25 per cent of the time walking or standing during the day, and 4 per cent during the night. The animals were lying down 35 per cent of the daytime and 80 per cent of the night.

The grazing habits of the animals from day to day were quite uniform. They had four primary grazing periods during the day and two during the night, but the night grazing periods were not so pronounced as a group as were those in the daytime.

REFERENCES