Diet Selection in Sheep

Produced for the CRC for Premium Quality Wool undergraduate program by;
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Feeding Choices

• **When to Eat**
  – circadian patterns

• **Where to Eat**
  – home range, plant communities, feeding patches, feeding stations

• **What to Eat**
  – food selection

• **How much to Eat**
Relationship between feed availability, bite size and bite rate

Source: Allden & Whittaker (1970)
What to Eat?

• Identify the potential foods

• Select from the range of feeds available
  – Note that monoculture is unusual except for full feeding intensive systems!
Relationship between tiller height and intake rate of mature and immature and sheep

Source: Allden & Whittaker (1970)
Selectivity

- Characteristic of foraging animals including the traditional intensively farmed species
- Highly variable between individuals
- Species differ in degree
  - cattle < sheep < goats?
  - Also variation associated with the proportion of browse in the diet
Relationship between sheep bite size (mass) and available green leaf

Source: Penning et al. (1994)
Relationship between dry matter and intake rate of wet or dry material

Source: Kenney et al. (1984)
# Food Choices of Omnivore - Wild Boar

<table>
<thead>
<tr>
<th>Food</th>
<th>% Dry matter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acorns</td>
<td>47</td>
</tr>
<tr>
<td>Fruits</td>
<td>5</td>
</tr>
<tr>
<td>Grapes</td>
<td>5</td>
</tr>
<tr>
<td>Other plant</td>
<td>5</td>
</tr>
<tr>
<td>Mushrooms</td>
<td>2</td>
</tr>
<tr>
<td>Grain</td>
<td>32</td>
</tr>
<tr>
<td>Animal</td>
<td>3</td>
</tr>
<tr>
<td>Leaf litter</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Fournier-Chambrillon et al. (1996)
Species composition of pasture and oesophageal samples

Source: L'Huiller et al. (1984)
The result of selection?
Sheep choices from 5 plant species - oesophageal samples

CRC
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Wool

% OF PASTURE

IN Paddock
Eaten by Animal A
Eaten by Animal B

Rye Grass
Sub Clover
Cape Weed
Erodium
Silver Grass

Source: Broom and Arnold (1986)
Selectivity - continued

- **Degree of selectivity by ruminants**
  - lupin species - 25 X
  - normal 1.5 - 2.5 X

- **Generally**
  - Green over Dry (water)
  - Leaf over stem (soluble carbohydrate)
  - Variety (clover vs grass)