Making Livestock Decisions in Dry Times

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Livestock Decisions

• Every farm business is unique
• Droughts are progressive and do not happen over night
  – Ongoing dry conditions in the USE is not something we are used to
• Have a livestock enterprise that is flexible with drought risk
• Make decisions early and review them regularly
• Set a time table
• What is the mental and physical energy cost to a decision
• Skills, experience, knowledge gaps
• Focus on what can be controlled
• What are my resources
  – Livestock condition, financial, feed, water, stored soil moisture, machinery and infrastructure
Drought Proofing Livestock

• Disposable stock in enterprises
• Set critical rain date or soil moisture availability
• Know what animals you will offload in a drought and which ones you would keep
• Value of past experience – your own and others
• Still keep up with routine animal health such as drenching
• Assess weather livestock really going to be unavailable and too expensive to be purchased back in following the drought
• If water is going to be a constraint in certain paddocks look at creating flexible enterprises on those paddocks
Managing Livestock in a Drought

- Wean early
- Sell
- Feeding
- Agistment/Leasing
- Delay mating
- Avoid overgrazing paddocks as the cost of recovery is high – use sacrifice paddocks
- Confinement feeding
- Water availability – carting water is expensive
- Purchasing feed, on farm storage, weeds and capacity to feed it out
Livestock Decisions

COST OUT YOUR DECISIONS

MAKE DECISIONS EARLY

ONCE ANIMALS HAVE LOST TOO MUCH CONDITION ITS TOO LATE
SA stud breeder pleads guilty to cattle neglect

by Beef Central, 08 September 2015

A South Australian woman has pleaded guilty to the underfeeding of 29 cattle between June and September last year.

Images of the emaciated, lice infested cattle on a property near Myponga in South Australia have been broadcast on 7 television news this week.

One of the images of the neglected cattle broadcast on Channel 7.

7 News has reported that stud cattle breeder Susan Gristwood, the wife of Adelaide ear, nose and throat specialist Doctor Ronald Gristwood, admitted neglect in the Adelaide Magistrates Court on September 2.

In April the Gristwoods were charged with 30 counts of ill treating an animal and two counts of failing to comply with an animal welfare notice.

The RSPCA alleged 29 cattle were emaciated and 11 more were neglected between June and September 2014 on the Gristwoods’ property south of Mount Compass.

Susan Gristwood, owner of the Adelaide Angus Stud, last week pleaded guilty to

The energy cost of grazing

• Why not open all the farm gates and hope for the best?
• As a general rule grazing livestock require an additional 10-40% additional energy above maintenance for grazing depending on grazing conditions
• In extensive areas or where livestock walk considerable distances to obtain feed and water or in hilly country this could increase by 50% above maintenance
• Under extreme conditions an animal may spend up to 13 hours eating and still not meet nutritional requirements
Value of Pasture

Digestibility (%)

- 75-80: active growth, green
- 70-75: late vegetative, green
- 65-70: early flowering
- 60-65: mid-flowering, green and dead
- 55-60: late flowering, in head
- 50-55: dry grass and leaf
- 45-50: dry stalks

Energy (MJ ME/kg DM)

- HIGH PRODUCTION: 10.8-11.6
- MODERATE PRODUCTION: 9.9-10.8
- MAINTAIN DRY STOCK: 9.1-9.9
- WEIGHT LOSS OF DRY STOCK: 8.2-9.1
- 7.4-8.2
- 6.5-7.4
- 5.7-6.5

SOURCE: NSW PROGRAZE® Manual, NSW Agriculture

Government of South Australia
Primary Industries and Regions SA
Maintenance Energy

To determine maintenance energy quickly:

**Beef**

10% of BW + 10

ie. 10% of 500kg + 10 = 60 MJ/day

Add extra 50% under drought grazing situation = 90 MJ/day

**Dry sheep**

10% of BW + 1.8

ie. 10% of 50kg + 1.8 = 6.8 MJ/day

Add extra 50% under drought grazing situation = 10.2 MJ/day

**Weaners**

15% of BW + 1.4
How much can animals eat?

- 3% of body weight as dry matter e.g. 500kg cow x 3% = 15kg DM (good quality feed)
- 120/NDF% of diet = % of body weight as dry matter intake
- Mature pasture has a 70% NDF 120/70 = 1.7% of bodyweight
- 60kg ewe dry who requires 9.3 MJME/day to maintain herself she can only eat 1.7% of her body weight as poor quality dry feed. She can only physically fit in 1.02 kg of dry matter. If the dry feed is supplying 8MJME/kg DM 1.02 x 8 = 8.16 MJME/kg providing enough feed is on offer in the paddock
- No allowance has been made for grazing under drought conditions
Supplementary Feed

Energy in barley is 12.5MJ/kg DM

Ewe energy deficit = -1.14MJ/d DM

Amount of grain required = 1.14MJ/12.5MJ
=90 gm/h/d barley

Convert to an as-fed basis
=0.09 x 100/90 = 100 gms/hd/day barley as fed

If we are not adequately supplementary feeding than there is further degradation of paddocks, animals will expend more energy searching for feed and will continue to lose weight.
Recovery Decisions

- Buying in stock versus breeding back slowly
- Purchasing livestock at the break versus several months later
- Trading animals
- Take on agistment or lease land
- Restocking with genetic superior animals versus what is cheapest
- Exploring other forms of income from land that may have traditionally been grazed e.g. crop
- Aware of animal health issues following a drought
- Set new goals for the livestock enterprise
- Generate cash flow
- Early feed options
Long Term Strategies

• Evaluating lambing or calving times to match feed
• Livestock enterprise goals: breeder, finisher, stores, weaners
• Pregnancy scanning – sell non breeders and prioritise feed
• Develop the skill to assess pasture quality and quantity and match animals e.g. grazing charts
• Have a drought plan in place
• Use predictors of drought and dry spells and make decisions early
• Assess fodder reserves/on farm storage
• Improve soil – clay spreading, address pH
Long Term Strategies

- Create flexibility in the livestock enterprise e.g. trading animals
- Imprint feed calves and lambs with feeds to be used once animal weaned at least 3 weeks prior to weaning a minimum for 4 times
- Consider weaning ages
- Grazing management to avoid overgrazing and utilise pasture and allow recovery of pasture after a drought
- Evaluate pasture species
  - Annual vs perennial
  - Seed characteristics
  - Resilience to dry conditions
  - Re-establishment costs
Opportunities Created Through Drought

- Lease land
- Replace old animals with younger
- Change breeds
- Crops that were planted for grain can be cut for hay to be used on farm or sold
- Tighten calving or lambing patterns by selling late females
Weaning Age and Feed Savings

• Females benefit by converting the additional energy available to maintaining bodyweight and maximising joining for the following year.

• Feed does not need to be processed through mother into milk for the lamb or calf which is an inefficient use of energy.

• Ewes or cows that are not required can be sold or sent away on agistment.

• Weaners can do better as not competing with their mothers for feed and can allocate a better paddock or feed.

• A ewe and lamb or cow and calf fed separately require less feed than if fed as a unit.
## Requirements

<table>
<thead>
<tr>
<th>Class of Stock</th>
<th>MJ ME Required per day</th>
<th>DSE Rating</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cow and Calf (450 kg)</td>
<td>119</td>
<td>13.2</td>
<td>DSE 13.2 MJ ME 119</td>
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<tr>
<td>Dry Cow (450 kg)</td>
<td>54</td>
<td>6</td>
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<tr>
<td>Weaner Calf</td>
<td>34</td>
<td>3.8</td>
<td>DSE 9.8 MJ ME 88</td>
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<tr>
<td>Ewe and Lamb (45 kg)</td>
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<td>2.4</td>
<td>DSE 2.4 MJ ME 14</td>
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<tr>
<td>Dry Ewe (45 kg)</td>
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<tr>
<td>Weaner Lamb</td>
<td>5</td>
<td>0.8</td>
<td>DSE 1.7 MJ ME 12</td>
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</table>
Optimal Weaning Age for Optimal Pasture Efficiencies

WHAT IS THE OPTIMAL WEANING AGE FOR CALVES AND LAMBS FOR OPTIMAL FEED EFFICIENCY AND UTILISATION?
Optimal Weaning Age for Optimal Pasture Efficiencies

- By 3-4 months of age a calf has a fully functioning rumen
- By 12 weeks a lamb has a fully functioning rumen
- When females milk supply reduced due to lack of feed lambs or calves will be forced to forage more and the rumen development is enhanced as a result
- Optimal weaning age for calves is 6 months of age
- Optimal weaning age for lambs is 12-14 weeks of age
- Early weaned calves should ideally be at least 100 kg and no less than 80 kg
- Early weaned lambs should ideally be at least 15 kg and no less than 10 kg
- Imprint feeding is critical
The decision to feed

- Animals lose weight in a drought because the stocking rate or demand of feed from the animal exceeds the carrying capacity or supply of feed.
- Assess what feed you have and suitability for target animals.
- Price and availability of feed if it must be purchased.
- Should I sell some hay and purchase grain?
  - Grain is often cheaper on a per MJ basis.
- Do I have adequate feed to feed into winter particularly if a late break occurs.
- Do I have the means to process grain for cattle and infrastructure to feed it out.
- Are commercial pellets an option.
- Do I need to supplementary feed or fully hand feed.
Why do a Feed Budget

- How much feed will I need and the cost
- Feed costs can take years to recoup from
- Know what each class of stock require
- Assess paddock feed available
- Determine what is needed and match to feed reserves on hand or what will be required to purchase in
- Forecast for the coming months
- Am I better to sell
Feed Costs?????

WHAT WOULD IT COST TO FULLY HAND FEED A 550KG COW FROM THE 1ST OF DECEMBER TO THE 31ST OF JULY WITH HAY TO FULLY MEET HER MAINTENACE ENERGY REQUIREMENTS ASSUMING NO PASTURE IS AVAILABLE?
## Maintenance Requirements of Cattle

<table>
<thead>
<tr>
<th>Liveweight (Kg)</th>
<th>Daily gain</th>
<th>Energy MJ ME</th>
<th>Protein (g)</th>
<th>Calcium (g)</th>
<th>Phosphorus (g)</th>
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<tr>
<td><strong>Pregnant heifers – Last third of pregnancy</strong></td>
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<tr>
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<td><strong>Bulls</strong></td>
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<td>800</td>
<td>0.0</td>
<td>95</td>
<td>882</td>
<td>27</td>
<td>27</td>
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</tbody>
</table>
Feed Budgeting – Cow Example

Feeding Period Full Hand Feeding Cows: 1st December to 31 July 243 days of feeding
550 kg Autumn Calving Cows with no paddock feed available
120 days from calving 70 MJ/day = 90 days
Lactating cow 90 MJ/day (March onwards) = 153 days
Good quality hay 9.5 MJ
   7.4 kg/DM/day pre calving to meet energy requirements
   (total 666 kg/DM for 90 days)
   9.5 kg/DM/day post calving to meet energy requirements
   (total 1453.5 kg/DM for 153 days)
Total 2119.5 kg DM = 2119.5 x 100/90 = 2355 kg of hay as fed
Assume good quality hay at $200/t = cost $471 to feed each cow for the 243 day period
Feed Budgeting – Cow Example

- No fuel or labour costs have been included
- No allowance has been made of the feed outside of milk for a calf to 5 months of age
- Partial supplementary requirements outside of this period have not been considered
- The potential income lost from selling pregnant cows has not been factored in but neither has the cost to produce a weaner calf
- Reality is many people do not feed cattle to requirements and cattle tend to suffer most in a drought
# Maintenance Requirements of Ewes to Maintain CS 3

## TABLE 1a. Energy Required by Ewes @ Condition Score 3 to maintain weight

<table>
<thead>
<tr>
<th>Maintenance energy (MJ/d) for ewes under drought paddock conditions</th>
<th>Confinement Fed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance energy (MJ/d) for ewes under drought paddock conditions</td>
<td>Confinement Fed</td>
</tr>
<tr>
<td>Day of pregnancy</td>
<td>small frame (45kg)</td>
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<tr>
<td></td>
<td>maintain @ CS 3</td>
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<tr>
<td>dry</td>
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<td>130</td>
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<tr>
<td>days lactating</td>
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<td></td>
<td>single</td>
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<td>10</td>
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<td>30</td>
<td>18.7</td>
</tr>
<tr>
<td>50</td>
<td>15.5</td>
</tr>
</tbody>
</table>

- Ask for advice on confinement feeding ewes and lambs.
- ewes and lambs
Feed Budgeting – Sheep Example

Partial Hand Feeding Period Ewe: 1\textsuperscript{st} January to 30\textsuperscript{th} April 120 days (4 months) of feeding. Ewe is lambing on 1\textsuperscript{st} April and is a single bearing ewe

- 60 kg ewe mid pregnancy – 11.5 MJ/day (70 days)
- 60 kg ewe late pregnancy – 14.4 MJ/day (20 days)
- 60 kg ewe early lactation – 21.5 MJ/day (30 days)
Feed Budgeting – Sheep

Example

Dry pasture is providing 5 MJ/day (can work this out by FOO and NDF to predict intake)

Energy deficit of

- Mid pregnancy 6.5 MJ/day
- Late pregnancy 9.4 MJ/day
- Early lactation 16.5 MJ/day

Energy in barley is 12.5 MJ/Kg DM

Amount of grain required

- Mid pregnancy = 6.5MJ/12.5 MJ = 0.52 kg/h/day barley
- Late pregnancy = 9.4 MJ/12.5MJ = 0.75 kg/h/day barley
- Early lactation = 16.5 MJ/12.5 MJ = 1.3 kg/h/day barley
Feed Budgeting – Sheep Example

Mid pregnancy will need 36.4kg/DM barley for 1 ewe (70 days)
Late pregnancy will need 15 kg/DM barley for 1 ewe (20 days)
Early Lactation will need 39 kg/DM barley for 1 ewe (30 days)
Total of 90.4 kg /DM

Covert to as fed basis

- 36.4 x 100/90 = 40.4 kg/head barley mid pregnancy
- 15 x 100/90 = 16.7 kg/head barley late pregnancy
- 39 x 100/90 = 43.3 kg/head barley early lactation

Need 100.4 kg barley as fed for 1 ewe for the 120 days
Assuming feed barley costs $250/t = $25.10 per ewe
Summary

• Every farm business is unique and so are the decisions
• Learn from your own and others experiences and find support – your not alone!
• Have a plan and make decisions early – don’t just pray for rain!
• Seek advice if you don’t know – don’t wing it!
• Cost out decisions – feed bills can be crippling!
• Plan for recovery – it will rain again!
• Plan for the long term this is not the first drought and is likely not going to be the last
Thank you!

The boys in the lab came up with this!

Solving farming in a drought?