



THE UNIVERSITY OF  
MELBOURNE

# **Annual Management Programs: Backbone of the farm**

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## Pasture curve – standard SE Australia appearance



To review differences visit <https://4dfarms.vet.unimelb.edu.au/>



# Seasonality

- Summer
- Autumn
- Winter
- Spring
- Dry/Wet Season (depends on environment, temperature/tropical)



# What do we have control over?

- Timing of reproduction
- Determine time of parturition by when joining occurs. Can manage this presuming you can separate males from females throughout year.
- Try to match nutritional needs to pasture supply (as best as possible)
  - Means young are born when green grass is available
- Time & length of mating – any impact of season on fertility?
  - Are males healthy and able to mate required numbers (soundness exam)
  - Minimum mating period for maximum pregnancy %



# What do we have control over

- When to wean (take young away from dam)
  - Immediately in some scenarios (dairy – helps control disease such as JD)
  - Balance between dam condition score (CS) and growth of the young
  - Ensure young animal able to consume and maintain itself on diet it is weaned onto (young dairy calf taken from mother but continues on milk and concentrates for several weeks prior to weaning from milk)



# What stocking rate?

- Field trials generated equations linking stocking rate (SR), rainfall (mm) and farm factors.
- For this subject we will use the French model (there are others such as the Saul model).
- FRENCH model:  $SR = 1.3 * (R - 250) / 25$

In other words the stocking rate (in DSE) is 1.3 times the yearly rainfall in mm minus 250, divided by 25

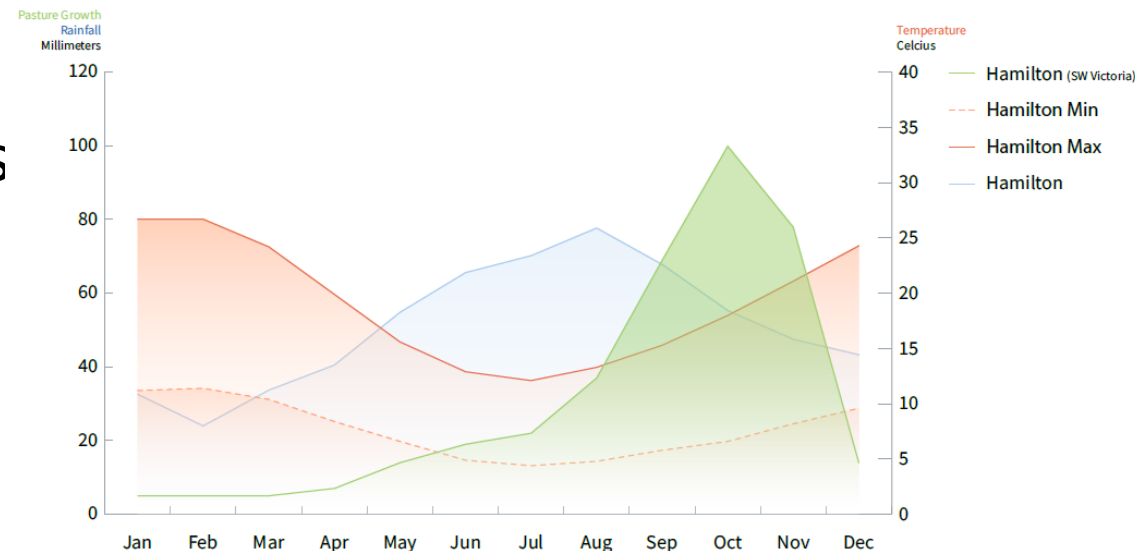
E.g. A farm in western Victoria with rainfall of 650mm can support:  
 $1.3 \times (650 - 250) / 25 = 20.8 \text{ DSE/ha}$

We will cover what a DSE is next week



# Beef cattle example

- Western Victoria – tradition calving in early Autumn, sell fast growing autumn born “vealer” at the end of spring
- If swap to late Winter/early Spring calving better match with feed supply and nutritional demand, also reduces metabolic disease (grass tetany, milk fever), produces more beef per hectare
- Can wean calves early summer if need
- Cheaper to supp feed calves than cows





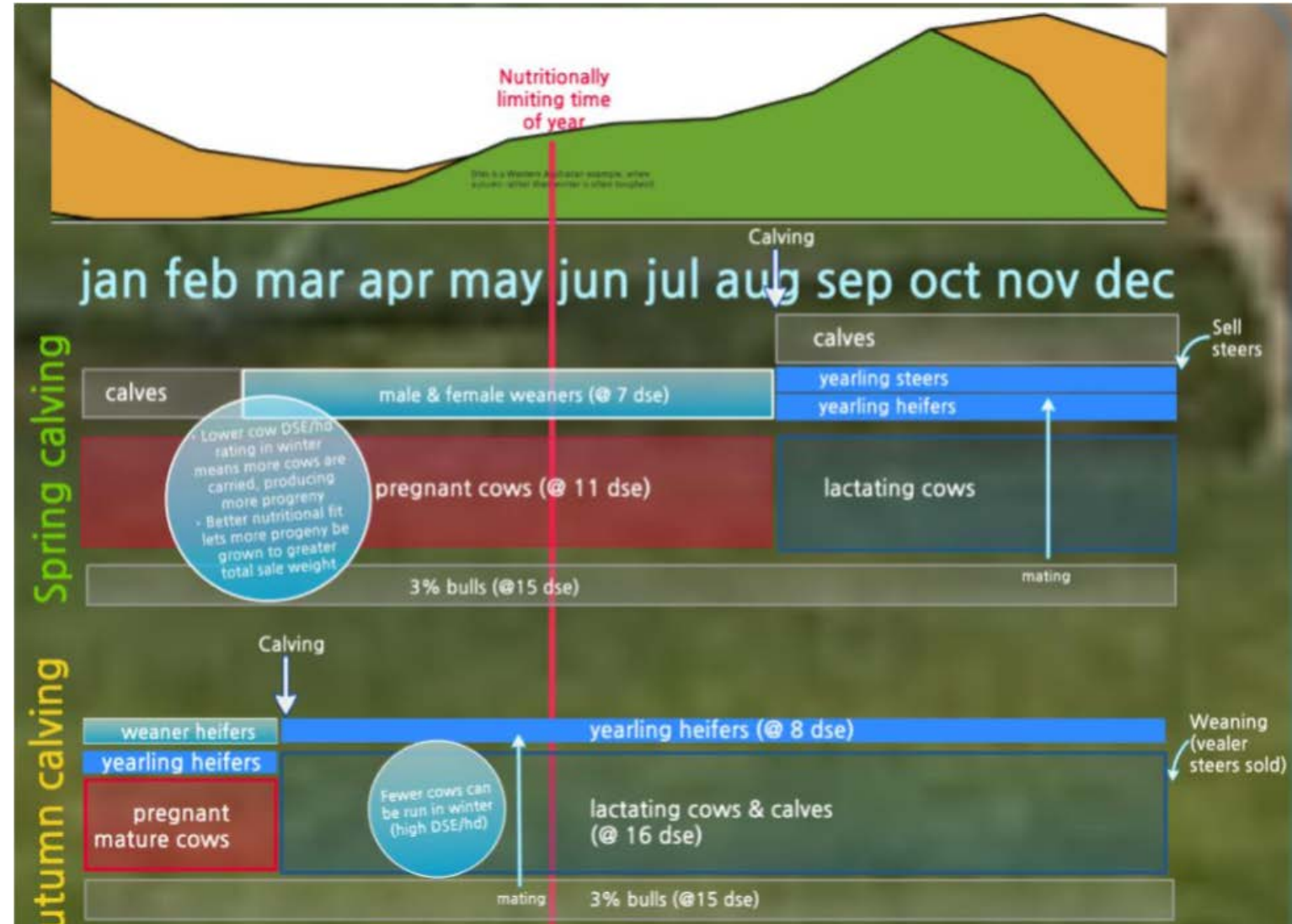


# Beef cattle example continued

- Traditional system – individual animal weights at sale are high  
BUT
- Total (per hectare) meat production is limited
- Cows often need lots of supplementary feed in autumn and winter, particularly if late autumn or even winter break
- Spring calving system (August calving), mated in November when lots of high quality pasture
- Wean calves as quantity/quality of grass reduces, grow weaners on supplementary feed plus pasture, maybe carry through second spring



# Comparing Autumn versus Spring





# Doing our sums

- How many cows can a 10,000 DSE farm carry with different calving times?

**DSE/head in June**

Category	Spring	Autumn
Breeding females	11	16
10 month weaners (M & F)	7	
Joined 15 month old F		8
3 % bulls	15	15

- How are 10000 DSE divided across ? cows and their offspring in spring v autumn systems
- Spring:  $11 * ? + 0.9 * ? * 7 + 0.03 * ? * 15 = 1000$ : Spring ? = 563 cows
- Autumn:  $16 * ? + 0.45 * ? * 8 + 0.03 * ? * 15 = 1000$  Autumn ? = 499 cows
- Can then go back and work out bulls/young stock. Extra 64 cows in spring system.

Management Calendar continued....



# What do we do with offspring?

- Are offspring the product to be sold?
  - When
  - Breeding? Production?
- Castration
- Vaccination
- Other strategic health treatment – timing really depends on when born as well as external environment



# Strategic animal health

- Vaccinations, drenches etc
  - Treatment in certain seasons may increase efficacy (how well it works)
  - Integrating times when treatment is optimal for age, immunity etc
- E.g. Lambs tail docked 2 weeks post lambing finishing (lambs old enough to be yarded), also vaccinated, ear tagged, castrated
- E.g. much of SE Australia has 2 summer drench program to help break the parasite lifecycle over summer and allow less drench use for remainder of the year

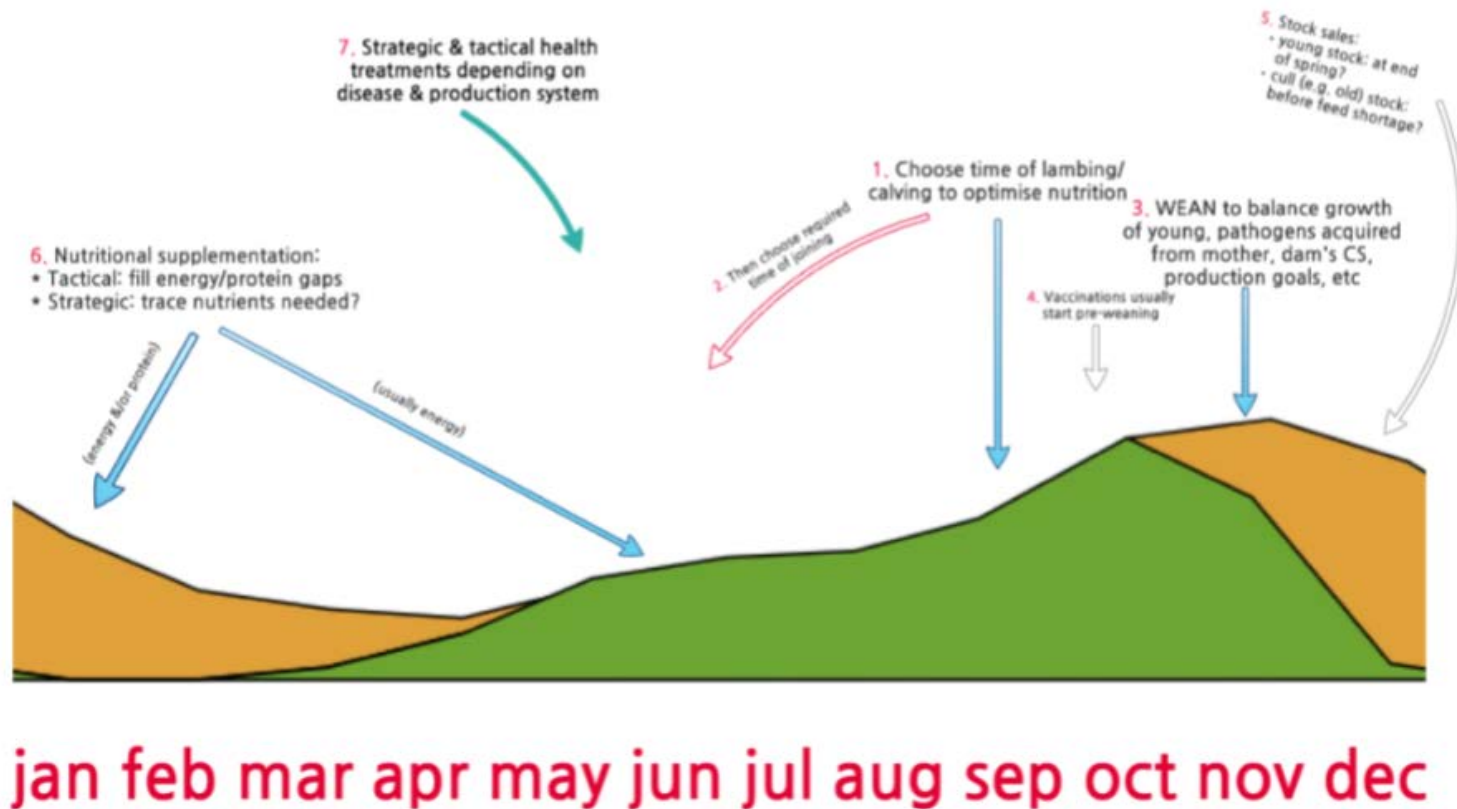


# When is harvest?

- Selling animals
  - Slaughter
  - Store stock for others to fatten
  - Breeding stock
- Milk
  - 1-3 X per day
- Fibre
  - 1-3 X per year (depends on breed and strain within breed)

# Summary

## Putting It All Together







# Conservation of feed

- While more expensive than grazing pasture, conserving feed on-property can help provide feed for longer
- Options
  - Silage – higher quality but higher cost (high % moisture)
  - Hay – poor quality but cheaper to produce (less moisture)
  - Sowing crop designed for this purpose e.g. oats
  - Specific feeds can fill nutritional “holes” or “low points” at critical times of year, often in winter. E.g. grazing wheat grows more dry matter in winter than other pastures