THE UNIVERSITY OF MELBOURNE

Melbourne Veterinary School

4.1 Watching grass grow!

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Managing pasture

- The extensive livestock production manager is essentially a manager of pasture and other supplementary feed inputs
- Key driver of extensive livestock = growth and utilisation of pastures to supply livestock needs
- Pastures can result in a range of direct and indirect issues that impact on animal health that may then involve veterinarian assistance
- Two critical terms
  - Growth or production of pasture
  - Utilisation of pasture
- Both pasture growth and utilisation must be achieved to get maximum benefit

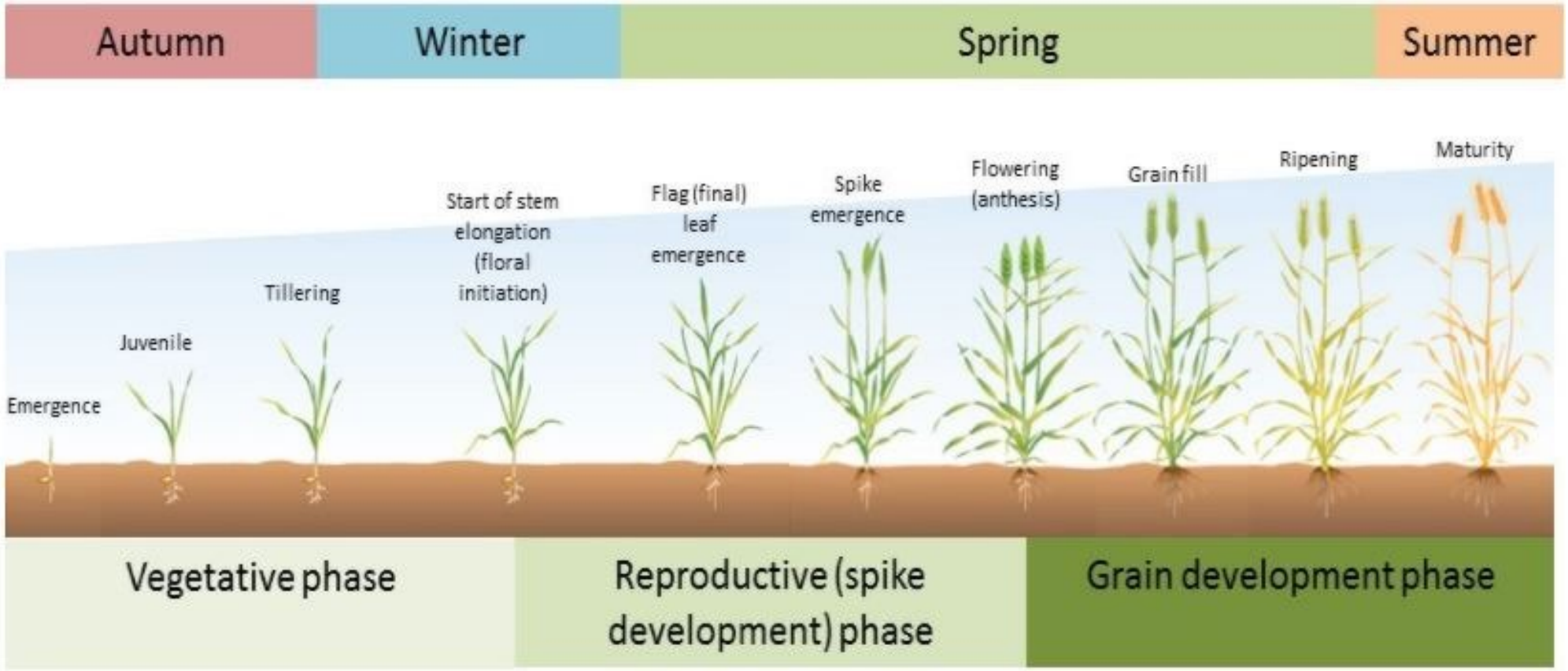
Utilising pasture

- Often refer to kgDM/ha of pasture grown/utilised
- Not always possible to effectively utilise pasture by livestock at certain times due to high growth rate
- Can conserve some pasture as
  - Hay
  - Silage
  - Straw
  - Standing feed
- Percentage consumption of pasture grown might be as low as 20% or as high as 80% (more intensive grazing eg dairy)

Plant growth and regrowth

- A range of different plants are used, particular differences between temperate and tropical system
- Tropical area plants use slightly different metabolic pathways (C4 versus C3)
- Examples of C4 plants include kangaroo grass, corn, sorghum etc
- Majority of plants used in southern livestock production are C3

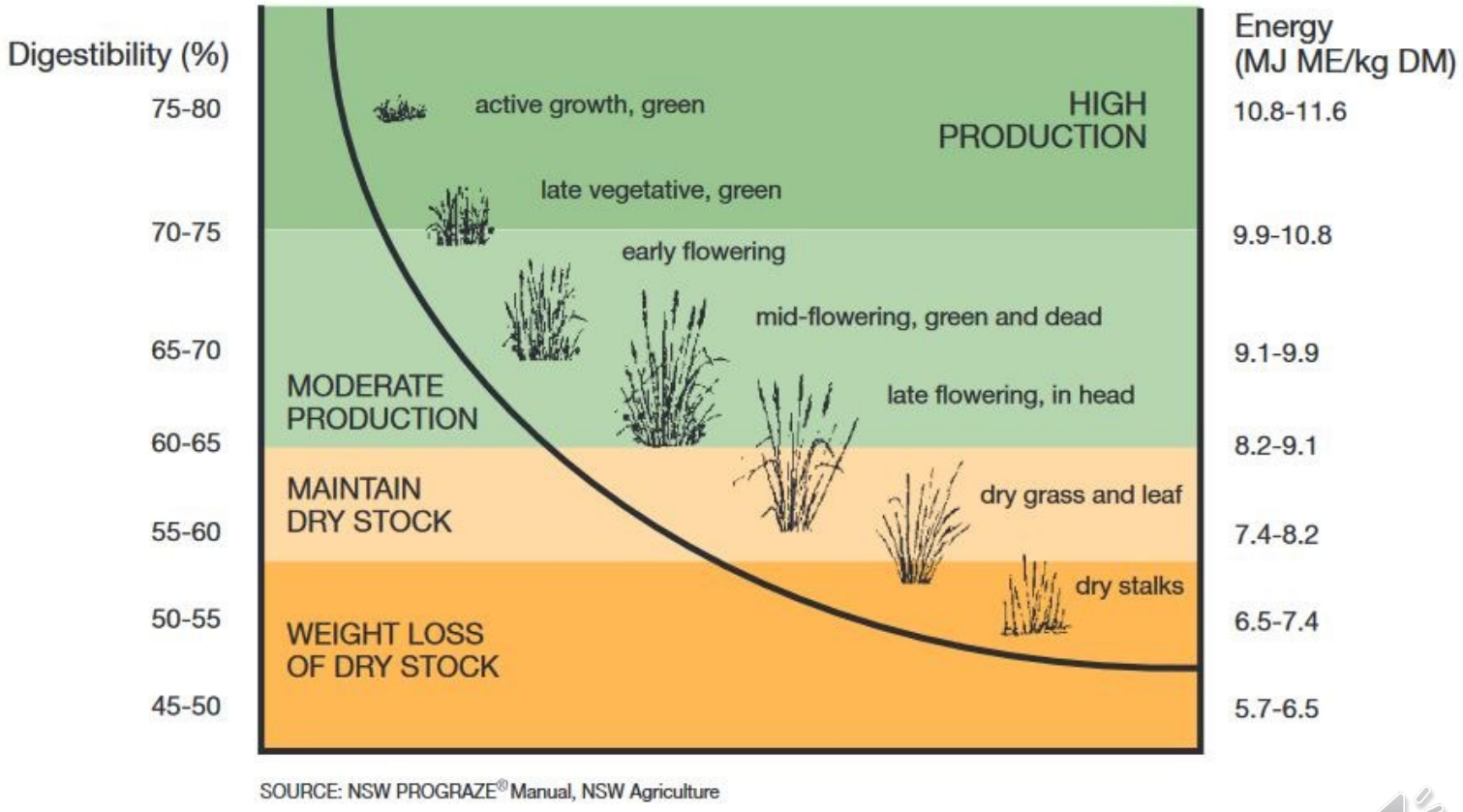
Seasonal plant growth



https://grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2018/08/wheat-phenology-and-the-drivers-for-yield-in-the-high-rainfall-zone

Plant phases, energy and protein

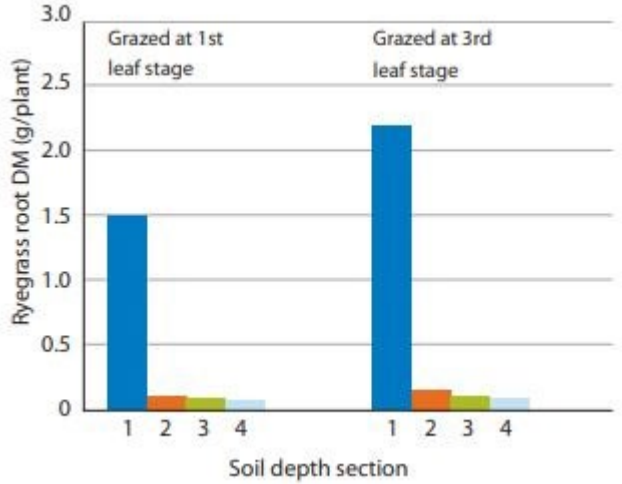
- Energy and protein (and %DM) varies significantly through plant growth phases (and time of year)
- Variation within/between paddocks
- Aim to maintain pasture in vegetative state as long as feasible (higher energy)



SOURCE: NSW PROGRAZE® Manual, NSW Agriculture

Perennial ryegrass grazing example

- Common plant in Southern Australia
- Along with Phalaris = dominant grass species
- Regraze pasture once third leaf almost fully emerged
- Allows plant to accumulate root reserves
- Maximises pasture harvest



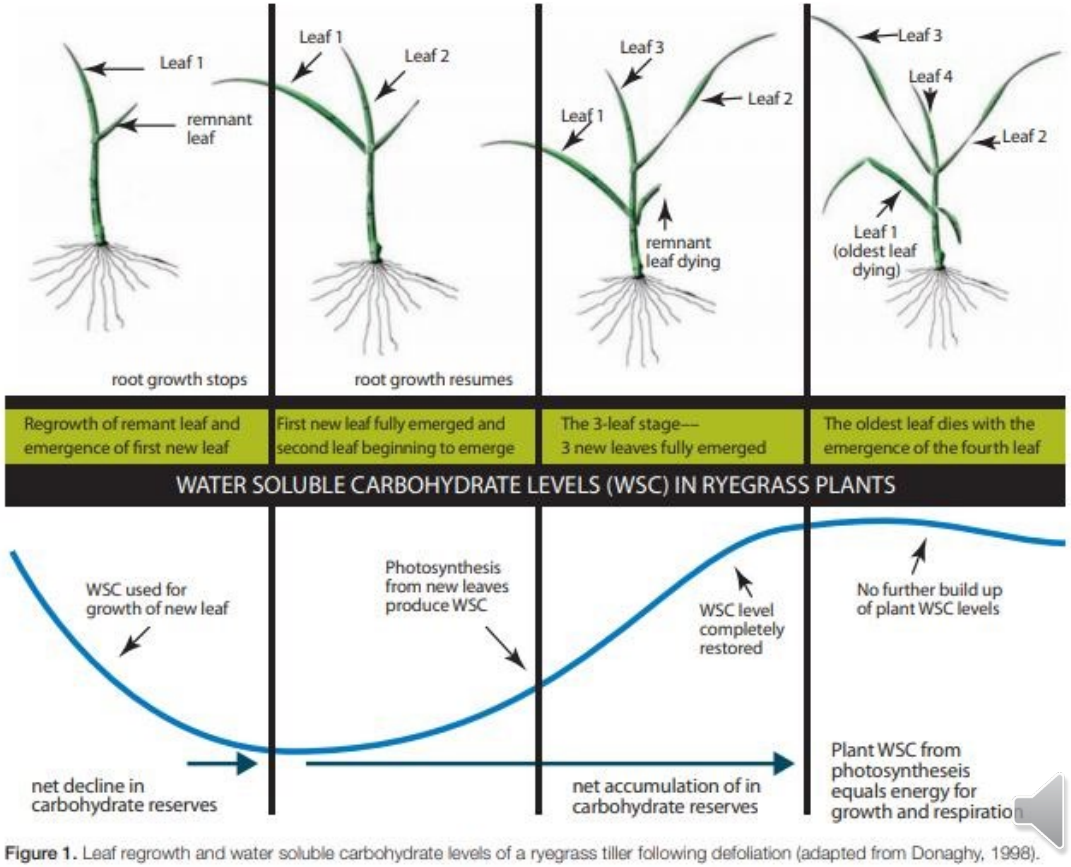


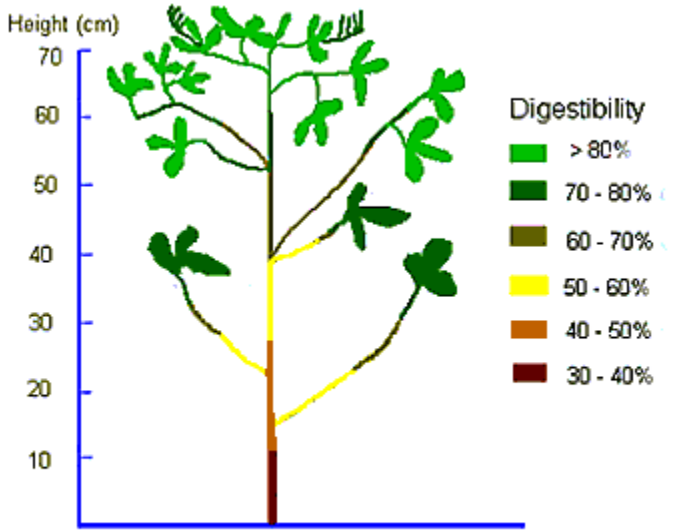
Figure 1. Leaf regrowth and water soluble carbohydrate levels of a ryegrass tiller following defoliation (adapted from Donaghy, 1998).

https://www.dairyaustralia.com.au/feed-and-nutrition/growing-feed-for-the-herd/growing-pastures/perennial-ryegrass

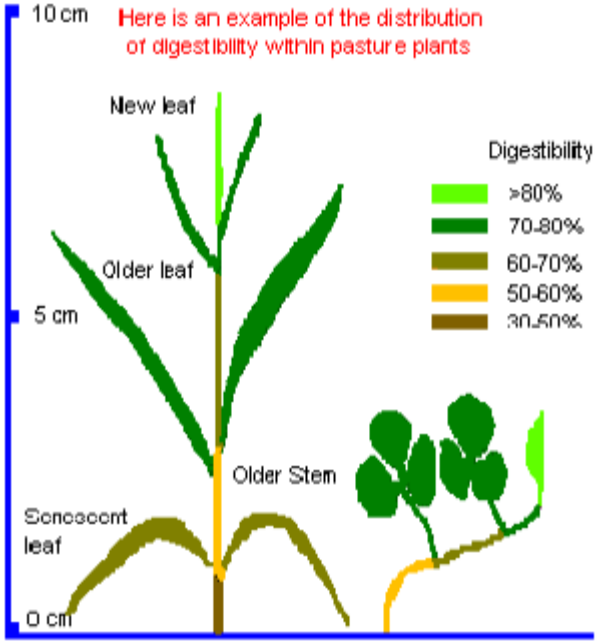
Digestibility

- Figures show alfalfa (lucerne) and grass examples (also with subclover)
- Smaller mouthed livestock able to be more discriminatory
- Cows not able to be as discriminatory

- Now have a look at some images from Dookie through time



In lucerne, the distinction between leaf and stem is even more marked.



https://www.hzn.com.au/pasture_digestibility_estimates.php