First thing to decide for small ruminant self replacing system

- Time of lambing/kidding
- Unless using lights/hormones this is chosen for some breeds as they will only breed to give birth in spring
- Generally choose 3-4 month before pasture senescence (when grass dries off) for when Merino ewes should have lambed
- Similar timing to produce store lambs is first/second cross
- If targeting prime lambs then 5 months pre pasture senescence

Stocking rate

- Based on French equation for southern areas of country in moderate/higher rainfall
- This can be used for both sheep and goats but need to work out appropriate DSE based on size of animal and what it produces e.g. dairy goats/sheep will require significantly higher DSE due to milk production, particularly given sheep milk significantly higher energy requirement than cow milk

Matching pasture production curve

- Sheep are grown in a range of climatic zones in Australia (excepting tropical areas of Aust e.g. north/coastal QLD, NT and northern WA)
- Pasture curve varies considerably (as per beef cattle examples)
- Gestation period for sheep/goats 145-150 days (approximately)
- Aim for animals to give birth for lactation to match peak pasture supply

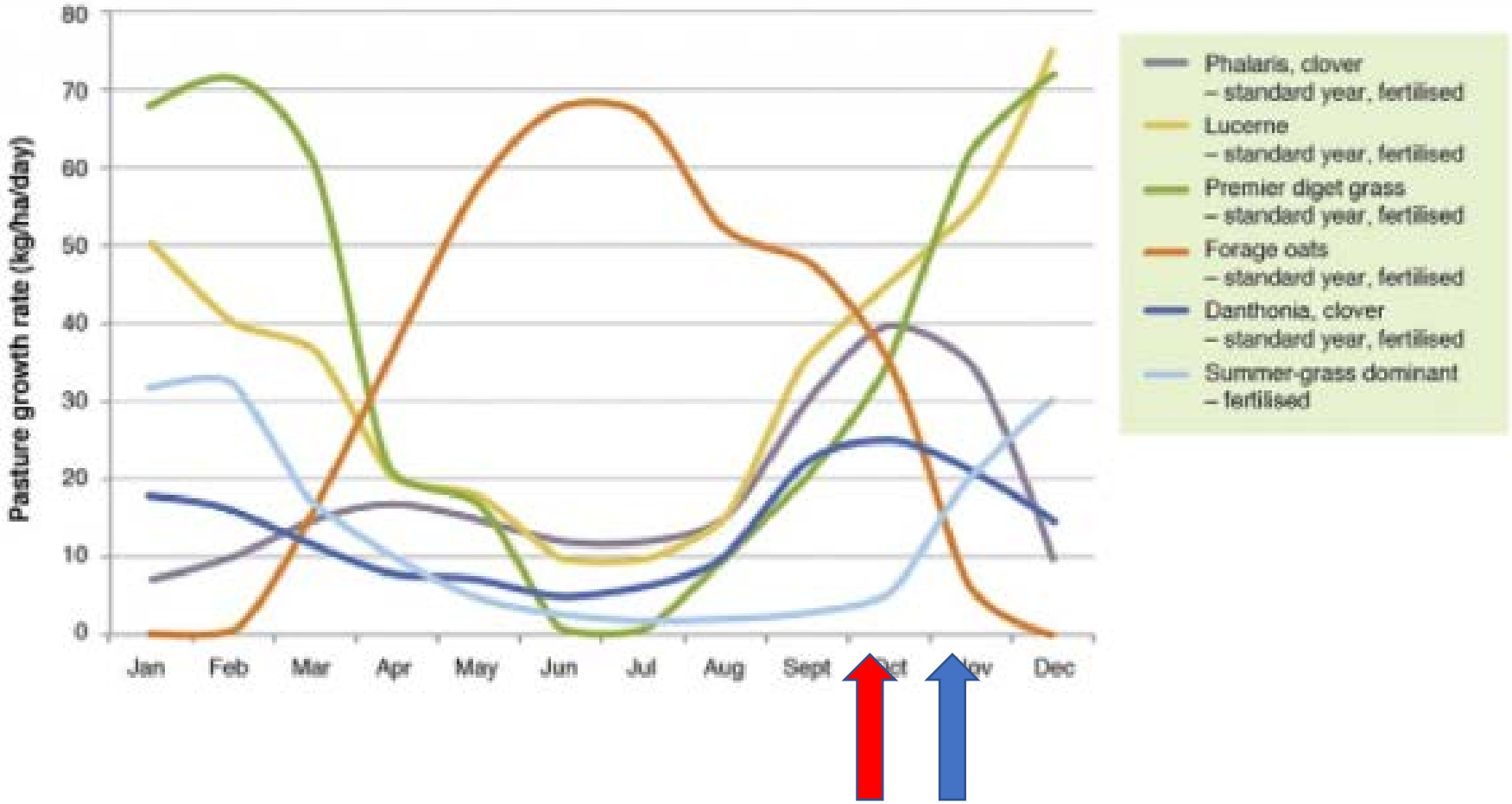

Figure 1. Pasture growth rates – North West Slopes NSW

https://www.evergraze.com.au/library-content/regional-pasture-growth-rates/ All following graphs from evergraze

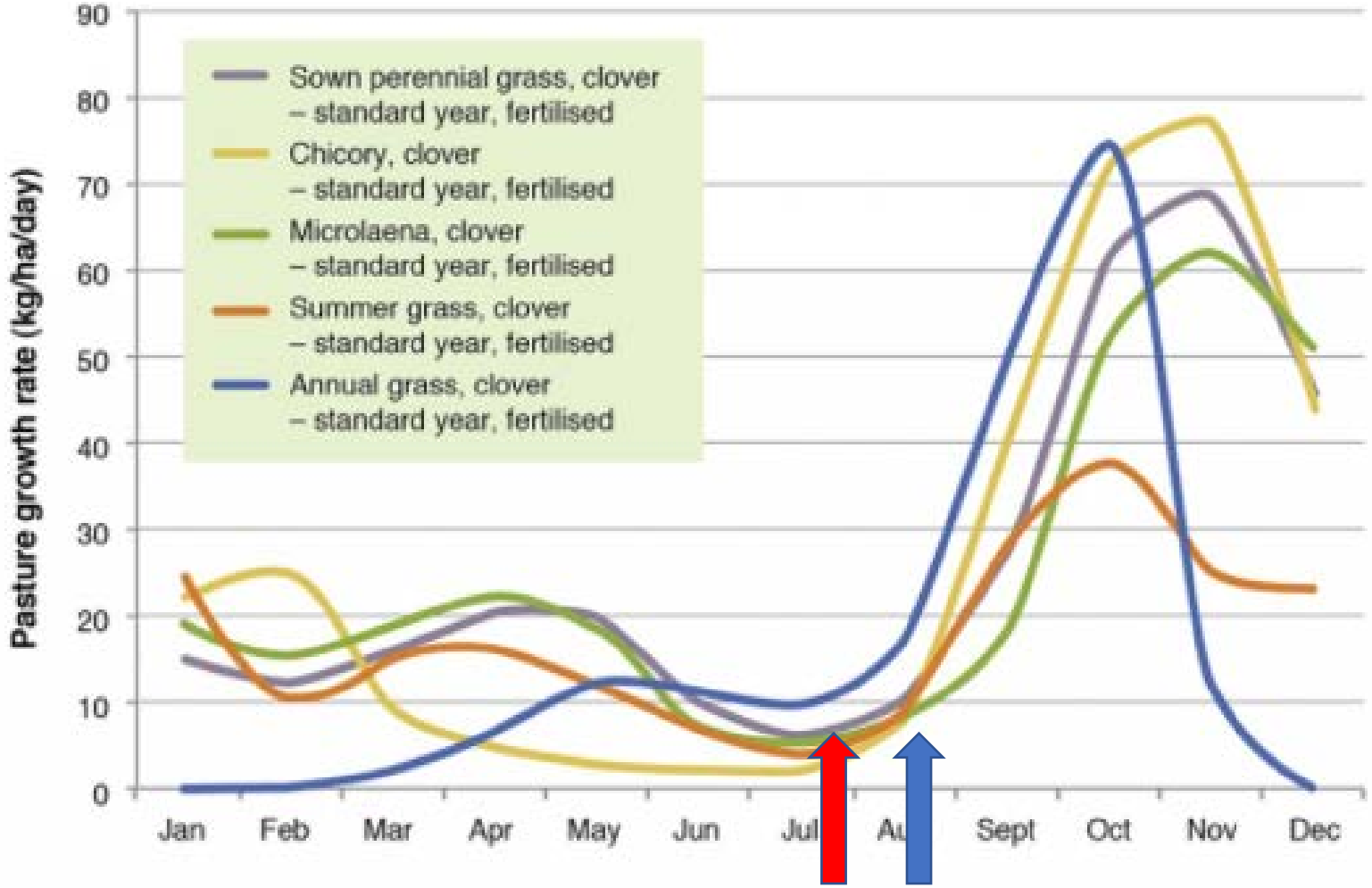

Figure 2. Pasture growth rates – Central Tablelands NSW

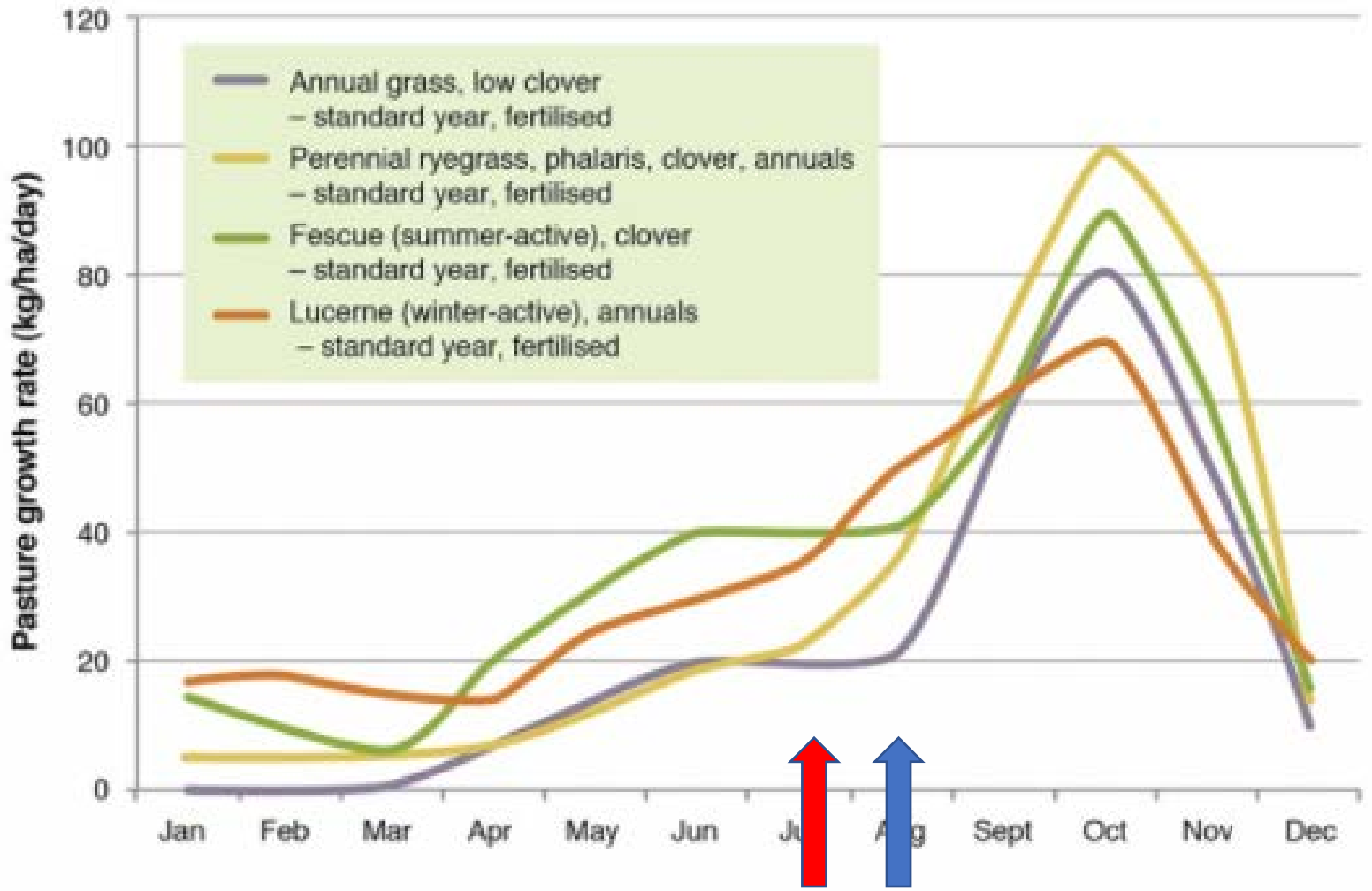

Figure 4. Pasture growth curves – South West Victoria (Hamilton)

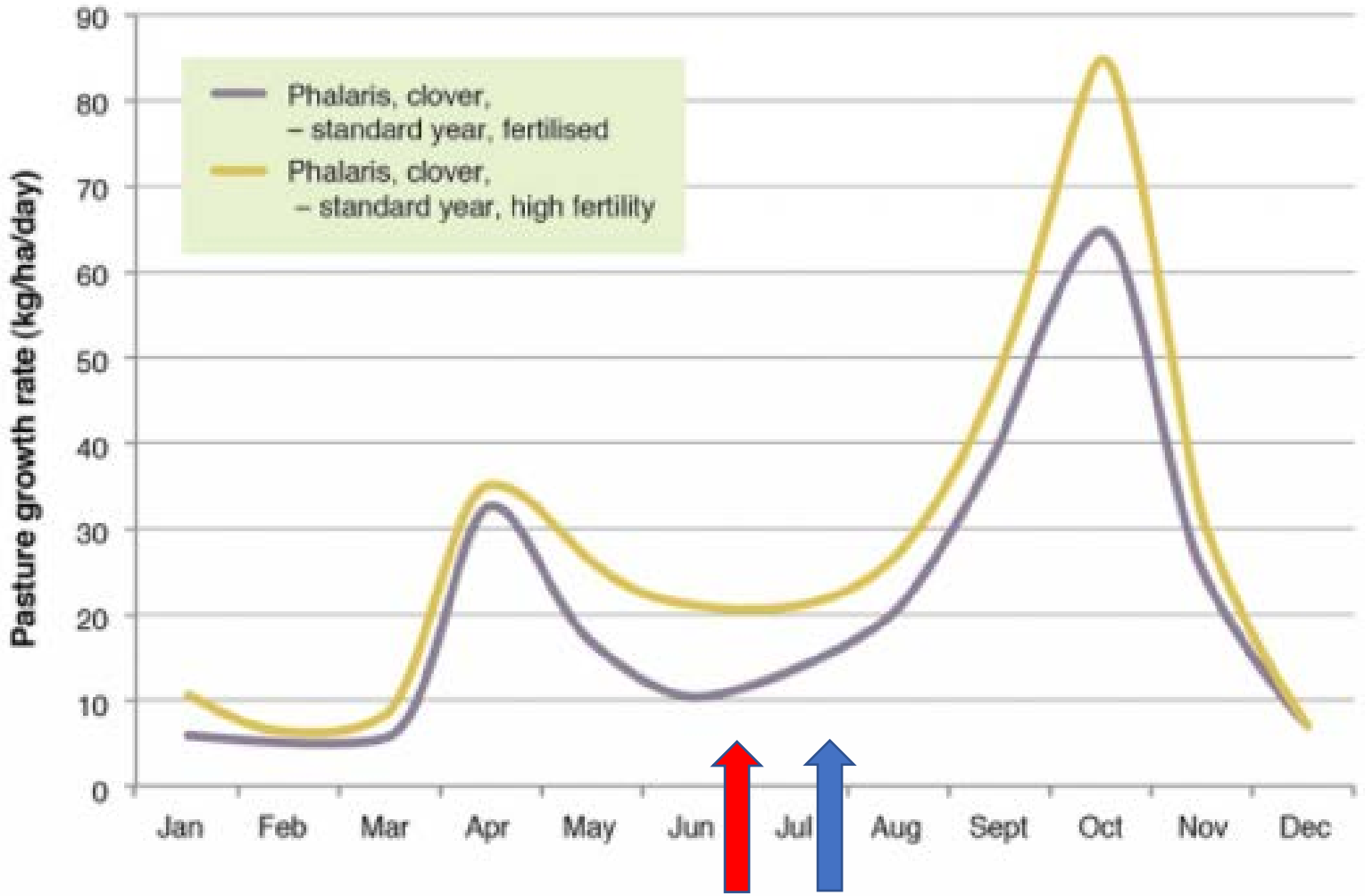

Figure 5. Pasture growth curves – North East Victoria (Seymour)

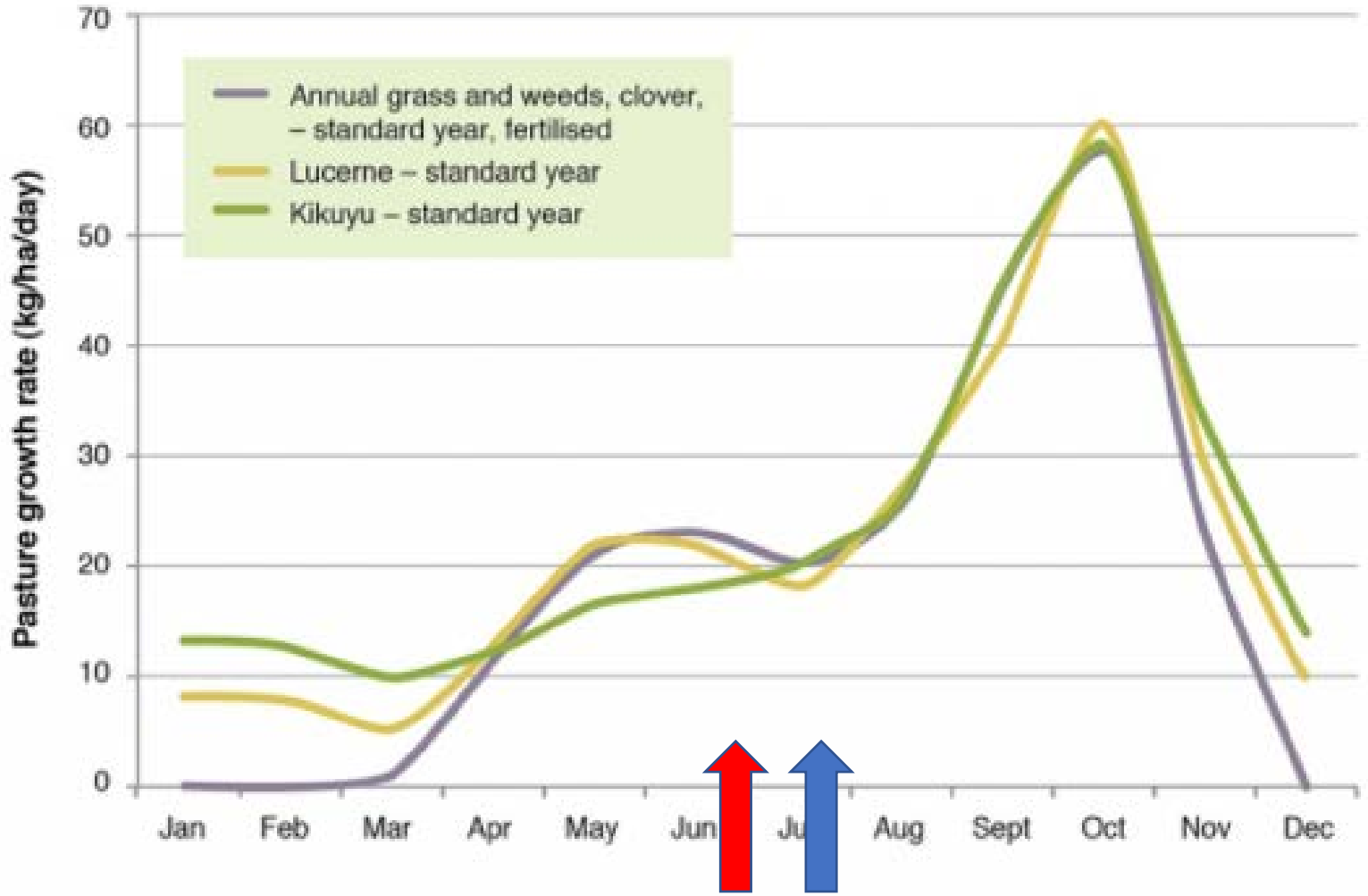

Figure 7. Pasture growth curves – South Coast WA (Mt Barker)

Optimal for SR

- Previous graphs suggest on optimal time to maximise stocking rate and output
- Range of reasons why producers may change from this
- E.g. differential pricing, lower quality grass, risk of early finish to season, workload, integration of labour with other events, impact on timing of other events such as shearing and interaction with cropping in sheep/wheat zone
- Similar picture for goats in these sorts of environments, noting for some breeds such as Angora will only cycle for a spring kidding anyway

International application

- Similar concept for wherever small ruminants may be farmed around the world
- Ideally produce progeny at maximal pasture availability to maintain CS
- Good growth of progeny and milk production
- Small ruminants vital to SDGs in many countries, particularly for small holders
- E.g. https://www.sciencedirect.com/science/article/pii/S092144882030019 95

Contribution of small ruminants to food security for Ethiopian smallholder farmers

Hiwot Desta Wodajo [a], Biruk Alemu Gemeda [a], Wole Kinati [b], Annet Abenakyo Mulem [a], Anouka van Eerdewijk [c], Barbara Wieland [a]

- Small ruminants were confirmed to be important for food security in smallholder farmer's livelihood, but gender differences were less apparent.
- Especial preference from men and women for food security was given for goats and poultry.

International Small Ruminants