Defining a management goal that maximizes the intake rate in palisadegrass

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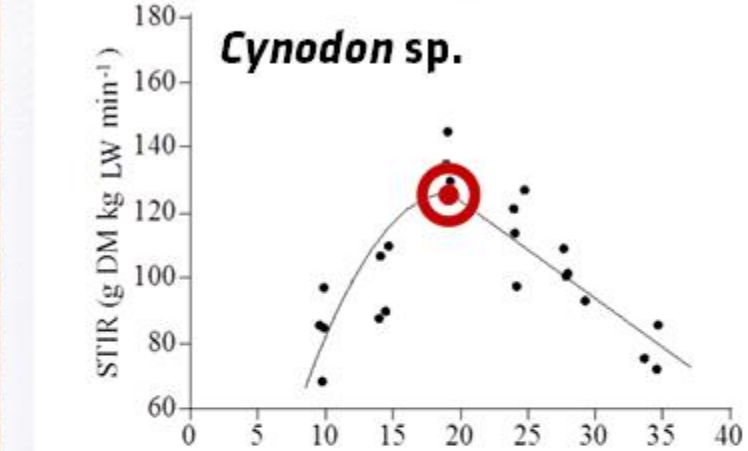
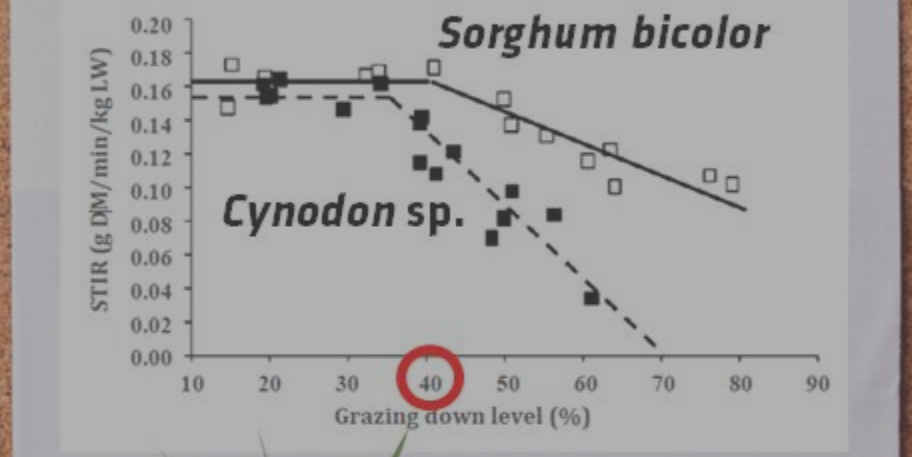
What is the goal of grazing management?
What criterion will the manager use to drive this process?

Rotatinuous Stocking: A sward management concept based on the ingestive behavior of the animals

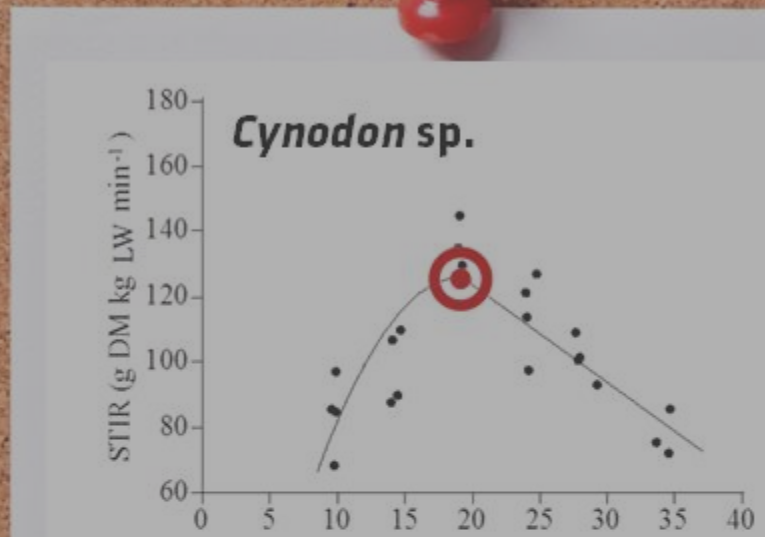


Pre-grazing

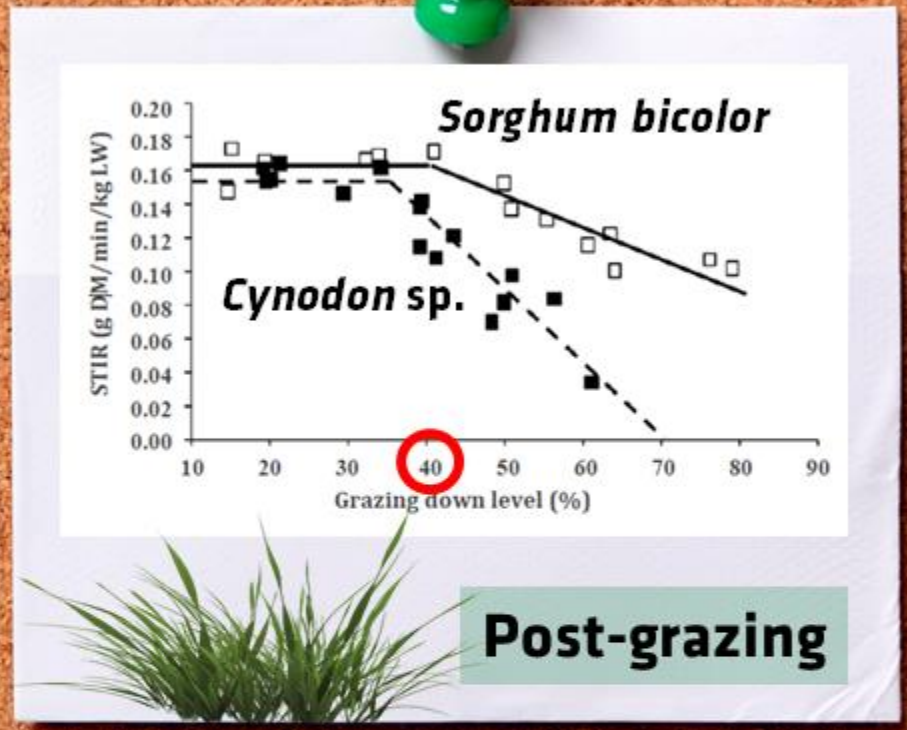


Post-grazing

It is recommended that depletion should not exceed 40% of the pre-grazing height to keep at high level the intake rate (Fonseca et al., 2012; Mezzalira et al., 2014).



Pre-grazing



Post-grazing

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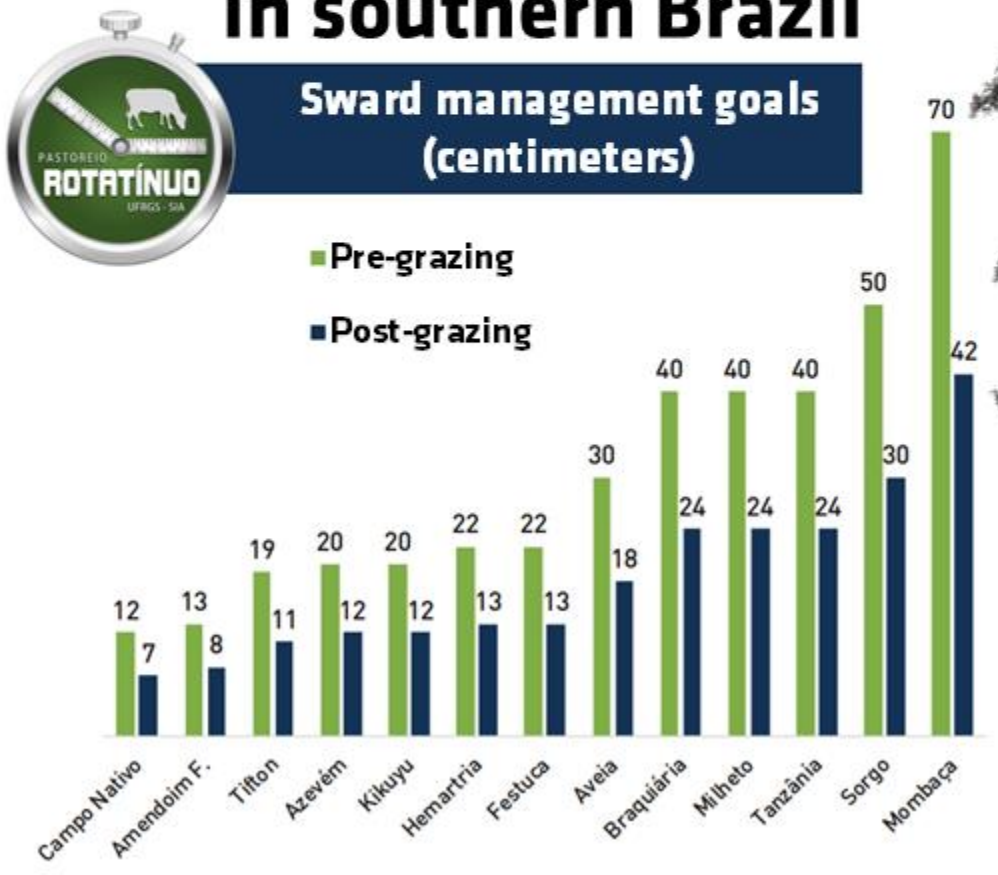
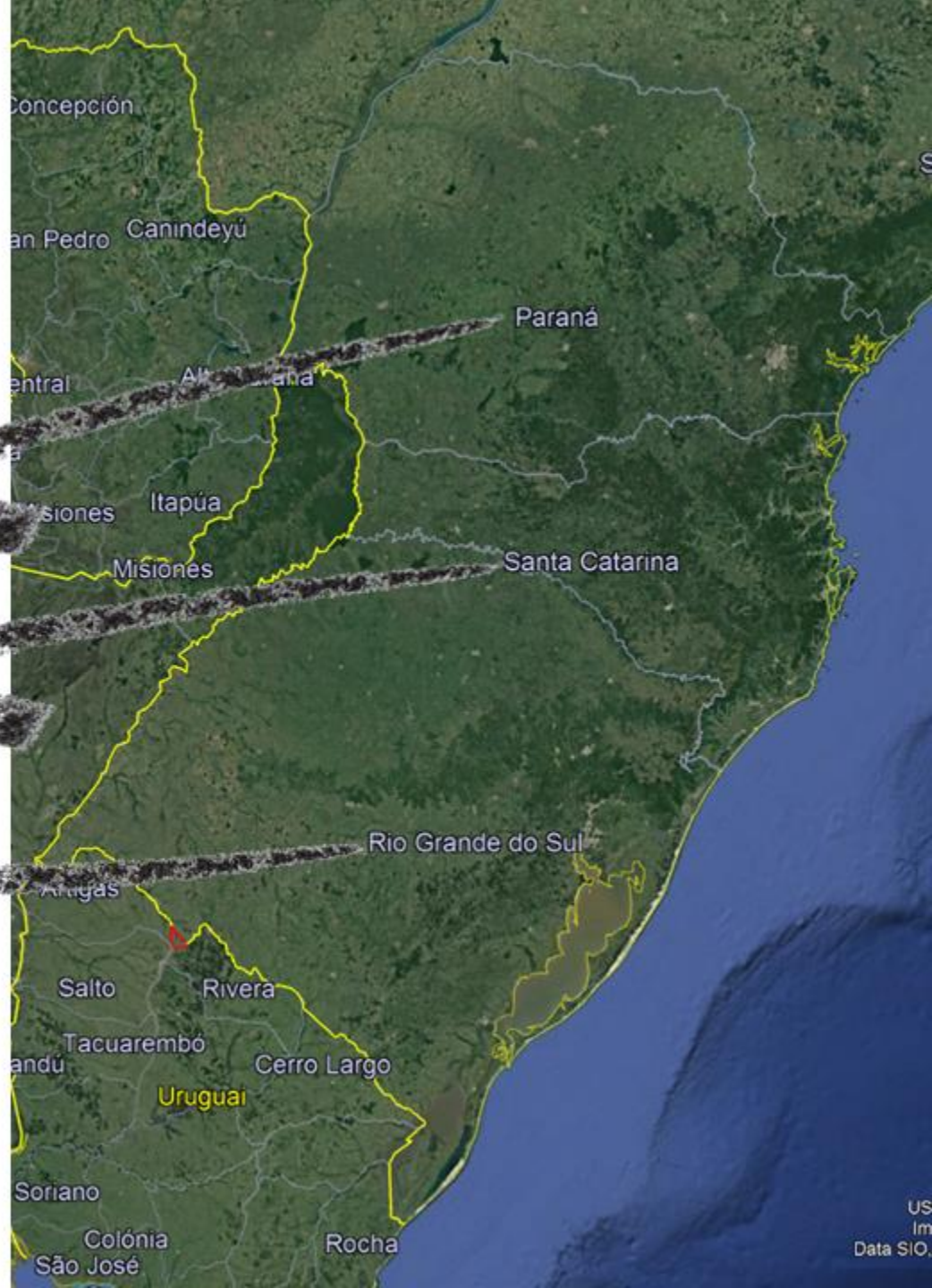
+ 1500

farmers use the Rotatinuous Stocking in southern Brazil





The objective of the study was to define the ideal sward structure translated in sward height for maximizing short-term intake rate in palisadegrass (*Urochloa brizantha*) pasture, a widely used forage species for the tropics and subtropics.

Once defined, such as ideal sward structure can be used as a management goal in the Rotatinuous Stocking.

MATERIAL AND METHODS

The experiment was conducted at the Agronomic Experimental Station of the Federal University of Rio Grande do Sul, in southern Brazil.

It consisted of 4 sward heights treatments (20, 30, 40 and 60 cm) in palisadegrass cv. Marandu (*Urochloa brizantha*).

The sward height was measured using a sward stick.

Were measured 200 points pre- and post-grazing.

Short-term intake rate (STIR)

The short-term intake rate (STIR) was measured using the double-weighing technique (Penning & Hooper, 1985). Before each grazing test, cows were fitted with bags for the collection of faeces and urine and with IGER Behaviour Recorder for monitoring ingestive behavior.

In the calculation of STIR data from IGER Behaviour Recorder was used.

Each cow was weighed before and after the grazing tests. Immediately after the grazing tests, cows were moved to a non-vegetated corral with neither feed, nor water for the same period of time (45 min) to estimate insensible weight losses (evaporation of H2O, loss and production of CO_2 and CH_4, Gibb, 1999).

RESULTS

The STIR presented a quadratic response to the sward heights. The maximum response was reached at 42 cm for a value of 57 g DM min^{-1}.

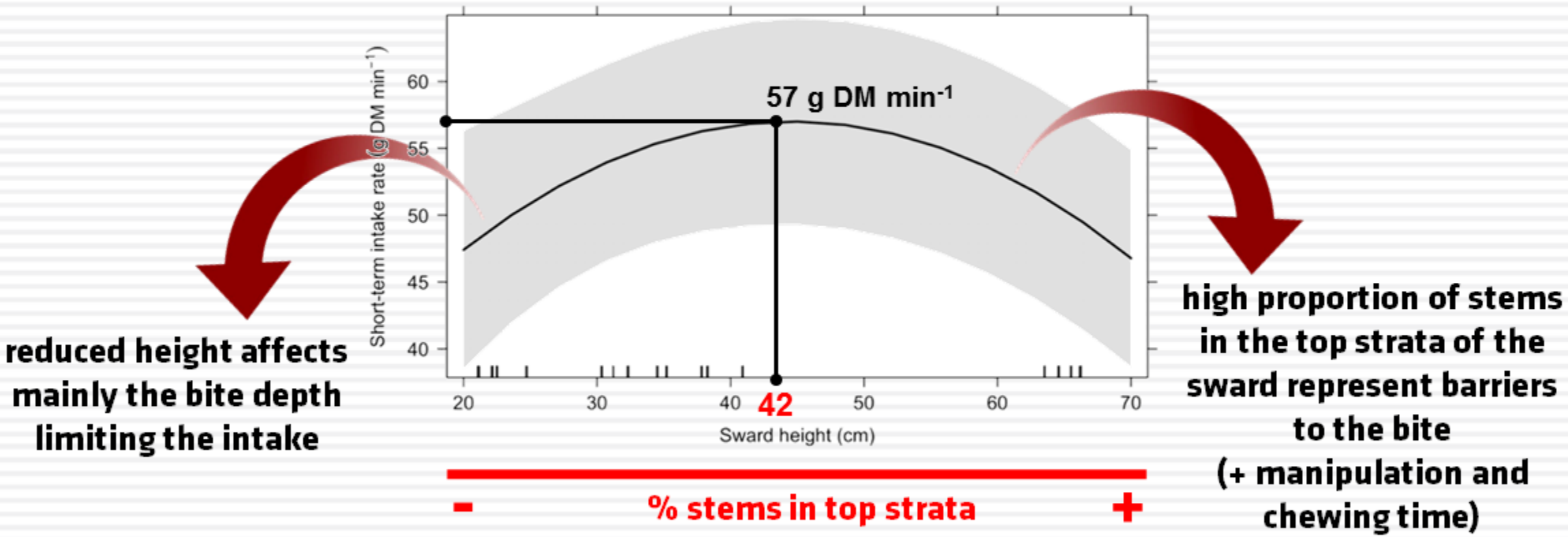


Figure: Short-term intake rate of cows as function sward height in palisadegrass.

$STIR = 29.0171 + 1.3314(SH) - 0.015838(SH^2)$, $p < 0.01$, $R^2 = 0.17$.

Fonseca et al., (2012) and Mezzalira et al., (2014) investigating the relationship between the short-term intake rate and the sward structure, defined pre- and post-grazing targets to maintain high intake rates under Rotatinuous Stocking. In these studies, the authors found in contrasting species (*Avena strigosa*, *Cynodon* sp. and *Sorghum bicolor*) that the ideal grazing down level was 40 % for all three species. In our study, the ideal sward height was 42 cm and the 40% of grazing down of this sward height would correspond to 25 cm of post-grazing sward height.

40% Grazing down

42 cm pre-grazing

25 cm post-grazing

CONCLUSION

We conclude that palisadegrass pastures must be managed at 42 cm of sward height in pre-grazing according to the Rotatinuous Stocking concept to maximize intake rate.

To all those who are unquiet to see a herbivore grazing, perceive with depth the science, art and poetry that exist in grazing process.

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Thank you for your time.

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