

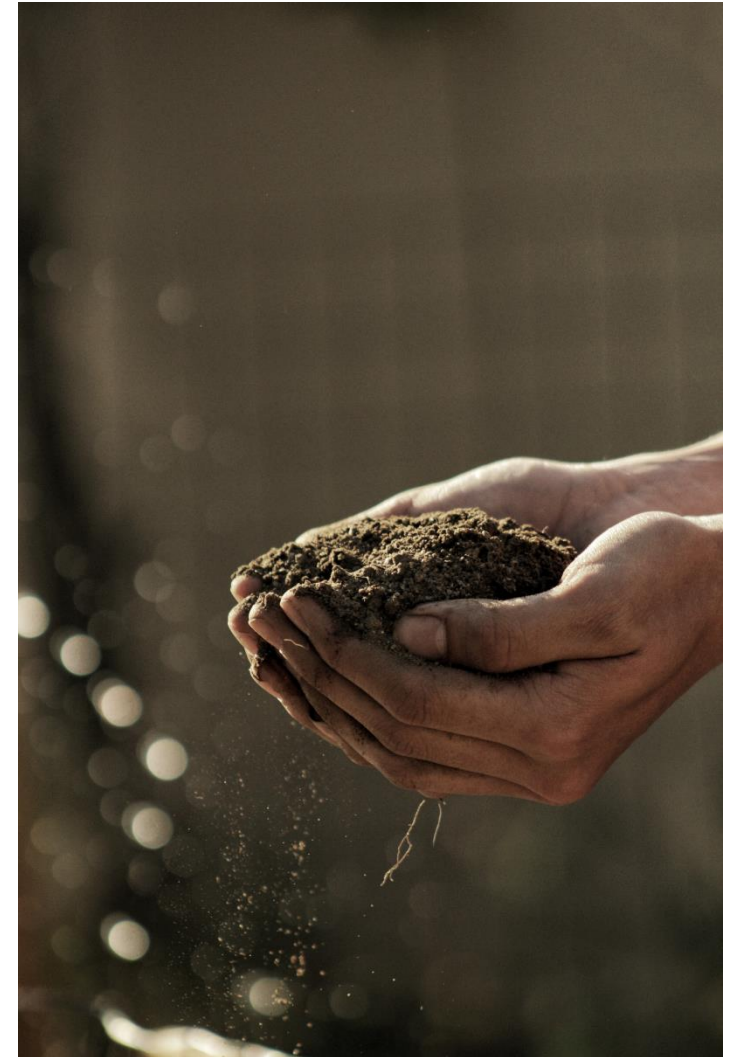


MULLUMBIMBY RURAL  
**MULLUM**  
*Co-Op*  
CO-OPERATIVE SOCIETY

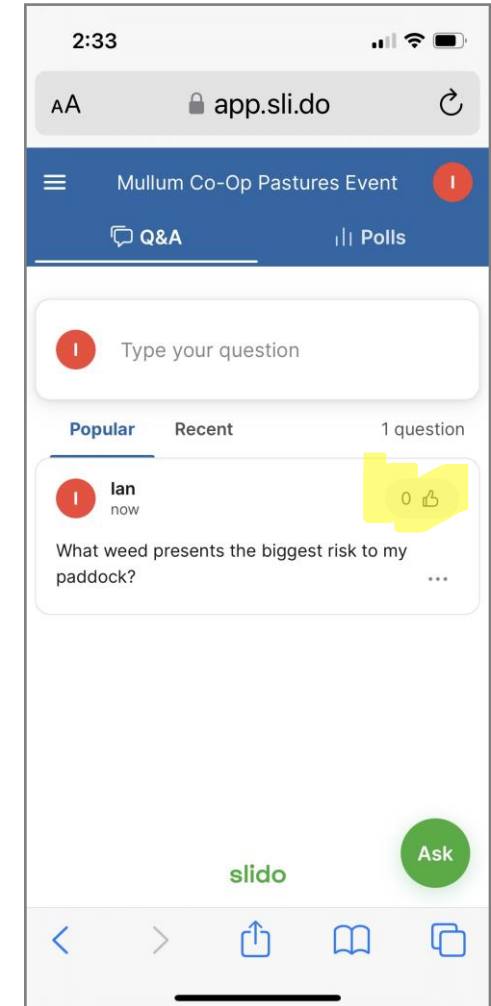
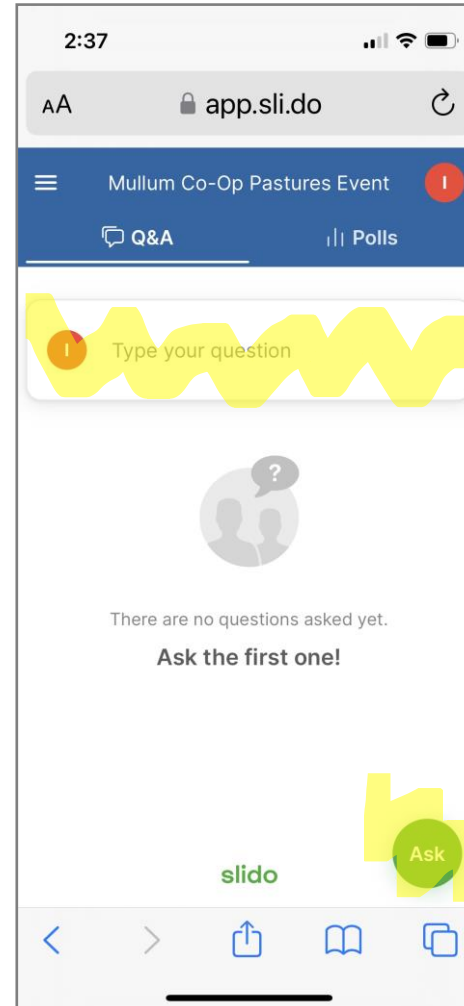
Pasture Management  
5 April 2023

# Agenda

1. 5.30pm – Food
2. 5.45pm - Welcome
3. 5.55pm - **Phil Kemsley** (Regional LSS Vet) – Setting the scene
4. 6.15pm - **Eddie Hayward** (Rous Council) – Weed identification and control
5. 6.35pm - **Natasha Favaloro** (Williams Seeds) – Soil and Seeds
6. 6.55pm - Introductions – **Nitya Rolfe** (NSW Government) and **Andrew Cameron** (Byron Shire Council)
7. 7.05pm - Q&A – Slido
8. 7.30pm - Networking



# Q&A – Sli.do





Local Land  
Services  
North Coast

## **Seasonal Disease Update**

# **Mullumbimby Rural Cooperative Presentation 5<sup>th</sup> April 2023**

Phillip Kemsley  
District Veterinarian Lismore

# Seasonal Reflection 2022 that was

**Cattle condition reflects pasture conditions reflects seasonal conditions**

**Conditions vary greatly by paddock and holding**

- Two floods then ongoing wet and waterlogged pastures created one of the worst seasons for many
- Wet and high urea \$ limited winter forage sowings
- Some hill country affected with pasture dieback
- Yersinia (flood mud scours) in winter & early spring
- Poor breeders and worms in calves
- Hungry cattle; poisonous plant issues

## Seasonal Reflection 2022 that was cont.

- Scalded paddocks post flood
- Growth of weeds not feed
- Poor pasture growth from waterlogging
- Leaving too many cattle on farm
- Then short green pick, high in moisture, very low in quantity, low in energy
- Demands of pregnancy and lactation
- Low intake; too muddy and lame to freely graze
- Impacts on immune system

# Seasonal Update 2023

## **Cattle condition reflects pasture conditions reflects seasonal conditions**

### **Conditions vary greatly by paddock and holding**

- Some hill paddocks struggling with pasture dieback
- Others good growth of quality feed such as kikuyu and Shaw creeping verna
- Good (but now rank?) setaria etc on flats
- Poor ovulation cows 2022; where are 2023 calves?
- Ongoing worms in calves
- Liver fluke; but **varies** greatly paddock to paddock \$

## Seasonal Update 2023 cont.

- Die back -> less feed / more weeds
- Cattle being moved to new areas / returning
- Red lantana
- Cestrum; both species
- Poison peach
- Bracken fern in young cattle
- Yersinia a possibility again this winter



# Pasture Dieback



*Pasture dieback spreading across a 40 ha paddock in the Tweed valley.*

# Health - Botulism

## Five main sources on north coast

- Environmental - the number 1 this season
- Silage
- Chicken manure
- Bone chewing
- Dead birds in molasses
- Vaccination for botulism is important

# Health – Worms

## Combined impacts of

- Short feed
- Poor nutrition and lower immunity
- Less available country = higher effective stocking rate
- Poor cows = less milk = calves graze earlier
- Ideal conditions for larvae survival on pasture
- All worm species, including some of the less common
- Attention to detail in drenching program

# Health - Flukes

- Stomach and Liver Fluke
- Each has their own species of snail as hosts
- Ideal conditions for both the snails and the intermediate fluke stage on pasture
- Is liver fluke present?
- Testing a much cheaper option than treating blindly
- Drench in the two months starting with “A”

# Liver Fluke



# Coccidiosis, worms & scours in calves

- Watch closely in young calves
- Seasonal conditions have been ideal for both
- Requires a sound diagnosis first as treatment differs
- Act early and contact your veterinarian

# Health - Blackleg

- Ideal seasonal conditions
- Movement of soil with flood
- It is still your land, but is it still your soil?
- Short green feed
- Outbreaks in both unvaccinated and single vaccinated young cattle
- Do not give Blackleg any window of opportunity
- Keep strictly to the vaccination schedule

## Metabolisable energy (ME) requirements

Values presented in the following table are intended as a guide only. For more specific information, seek professional advice.

Live weight (kg)	Growth rate (kg/day)	Metabolisable energy requirement (MJ/ME/day)	Minimum energy concentration of feed source (MJ/ME/Kg/DM)	Minimum crude protein of dietary dry matter (%)	Minimum amount of feed required to meet energy demands** (kg DM/hd/day)
<b>Steers and heifers</b>					
200	0.5	48	8	11	6
	1.0	68	11+	13	6
300	0.5	64	7	10	9
	1.0	89	9.8	13	9
400	0.5	77	7	9	11
	1.0	100	9	13	11
<b>Dry pregnant heifers</b>					
400 mid pregnancy	0.5	79	7.2	10	11
450 late pregnancy	0.5	85+	7.7+	10	11
500 mid pregnancy	0.5	86	7.2	9	12
500 late pregnancy	0.5	107+	9+	9	12
<b>Lactating first-calf heifer (range depends on level of milk production)</b>					
450	0.5	120-140+	10+	11	12
500	0.5	130-153+	10+	11	14
550	0.5	135-158+	10+	11	15
<b>Lactating mature cows (range depends on level of milk production)</b>					
500	0*	90-130	7+	10	14
	0.5	115-150	8.2+	10	14
550	0*	97-135	7+	10	15
	0.5	120-157	8+	10	15
600	0*	100-139	7+	10	16
	0.5	122-160	8	10	16
650	0*	105-140	7+	10	17.5
	0.5	127-165	8	10	17.5
<b>Mature bulls</b>					
600	0*	63	7	9	9
	0.5	93	7	9	14
800	0*	81	7	10	12
	0.5	112	7	10	16
950	0	89	7	11	13
	0.5	122	7	11	17

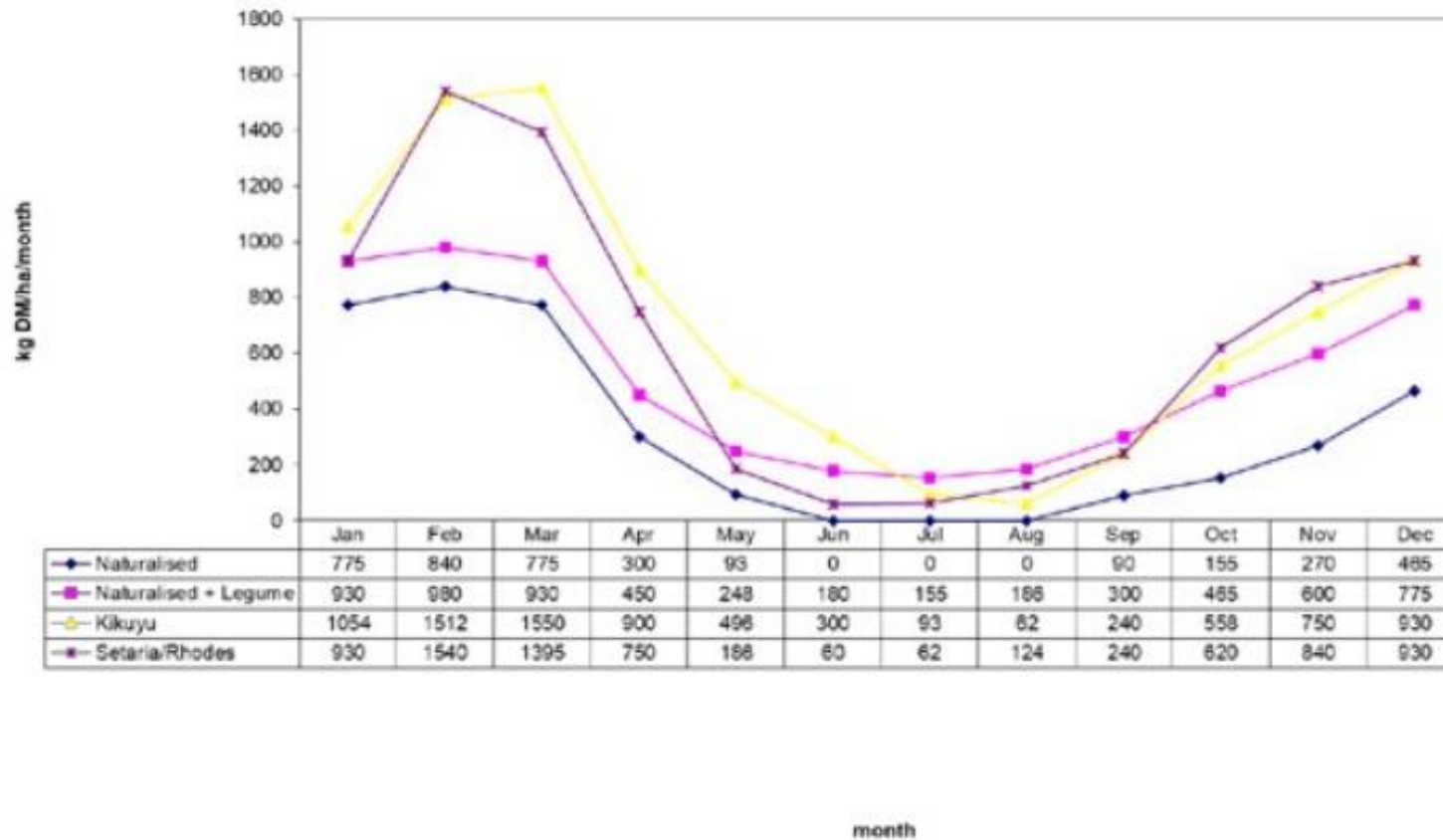


# Breakfast Cereal guide to Nutrition

- The big 3; Energy, Protein & Fibre
- Will all vary greatly with pasture stage of growth
- And of course with pasture species
- Cattle need “Just Right” balance of all 3

# Fill the Winter Gap

Pasture Growth Curve for Average Growing Conditions per Month (North Coast)



# Fill the Winter Gap

- Reduce numbers
- Winter forages; ryegrass, oats
- Hay or silage
- Molasses / urea
- Grain based rations
- Blocks



# Winter Forages “I’ll have what she’s having”



# Back to the Basics Energy, Protein & Fibre

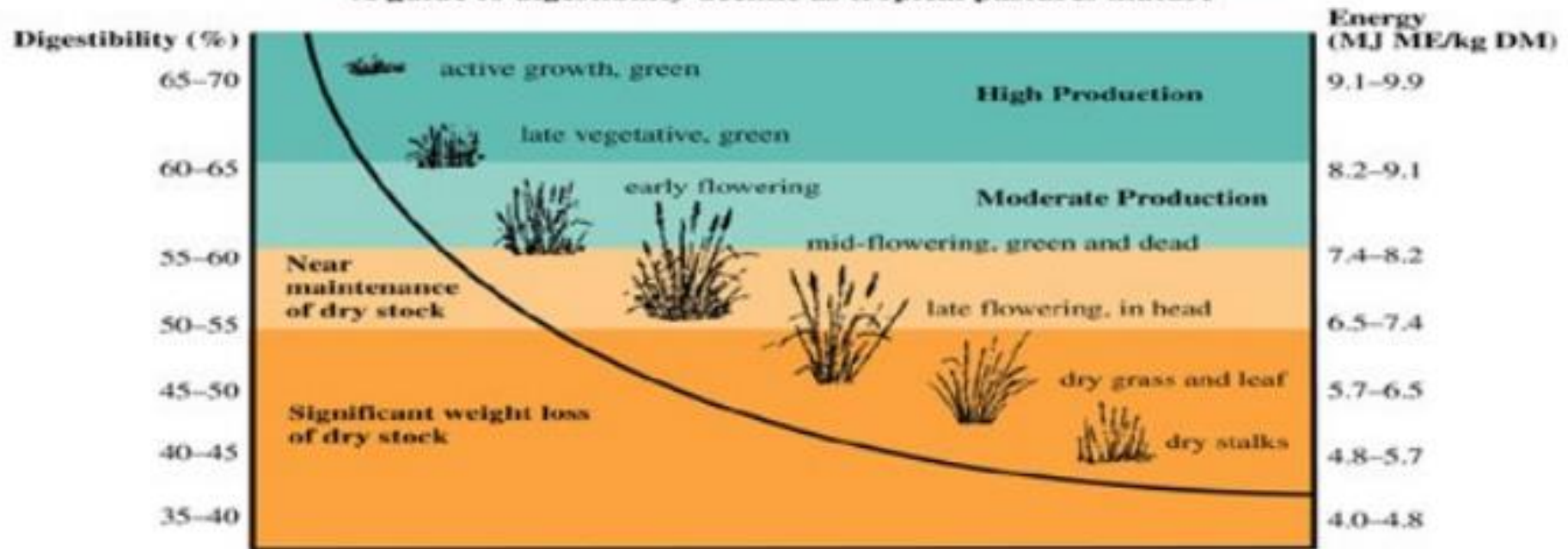
## **Conditions vary greatly by paddock and holding**

- There is no one single feed recommendation
- What is fed will depend on paddock feed on hand and stage of pasture growth
- The aim is to correct any imbalance in the ratio of the 3 basics; Energy, Protein & Fibre
- Note that the following slides on supplementation and stages of growth apply to

# Stage of Pasture Growth

## Relationship between Digestibility and Pasture Maturity (Tropical Pasture)

A guide to digestibility decline as tropical pastures mature



*Relationship between digestibility and pasture maturity for tropical pasture*

# Stages of Pasture Growth

Note that the following slides on supplementation and stages of growth apply to

- Desirable good quality high productivity grasses e.g. Setaria, Rhodes grass and Kikuyu
- BUT not to the undesirable low quality low productivity grasses e.g. Broadleaf Paspalum, Carpet Grass, Compressum, common couch and Bahia (Pensacola)

# Stage 1 of Pasture Growth

- Short green pick, often after spring rains
- High digestibility, good protein, BUT
- High water, low energy, low fibre, very low quantity
- Dung pats scant and flat
- Cattle loose weight quickly, more energy eating than in feed

## Supplementary feed

- Hay for fibre
- Grain for energy (depending on hay quality)



# Stage 2 of Pasture Growth

- Vegetative stage
- “Not too heavy, not too light, Just Right”
- Or “Goldilocks stage”
- Dung pats look just right
- For most pastures the ideal balance of;
- Energy, Protein and Fibre
- Aim to keep at this stage by grazing management
- Supplementary feeding; not needed

## Stage 3 of Pasture Growth

- Pastures at flowering and early seed set
- Fibre increases and quality declines rapidly during this phase
- Plenty of bulk, but energy and protein decline with seed set
- Dung pats start to firm
- Aim to graze back or slash to return to stage 2
- Early stage 3 cut for hay

Supplementary feeding usually not required BUT be aware of next phase

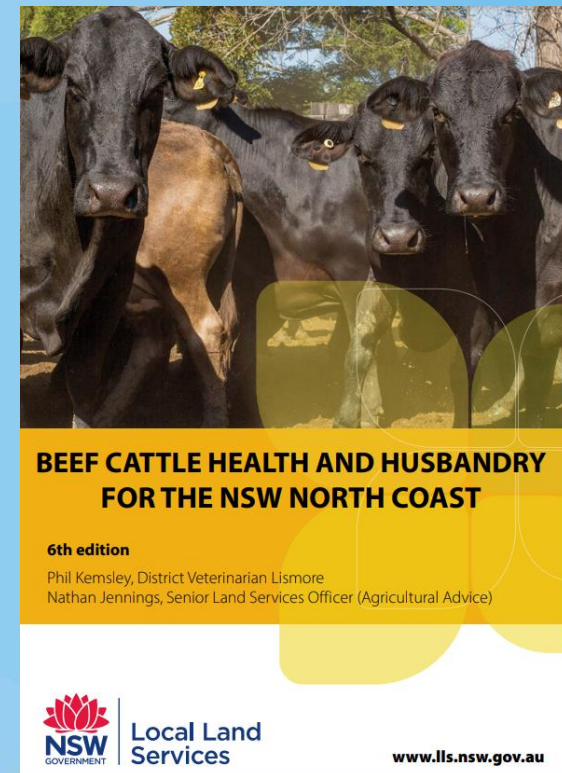
# Stage 4 of Pasture Growth

- Dry standing feed
- High fibre, but poor digestibility, low energy & low protein
- Even with Rhodes grass and other desired grasses
- Dung pats will stand high (scaffolding) and dry
- If paddock feed is to be of any use need to supplement energy and protein
- Molasses / urea
- Grain based rations, protein meals

# For Further Information

These topics are all covered in more detail in

Collect your copy tonight





# WEED BIOSECURITY: Priority weeds in your region

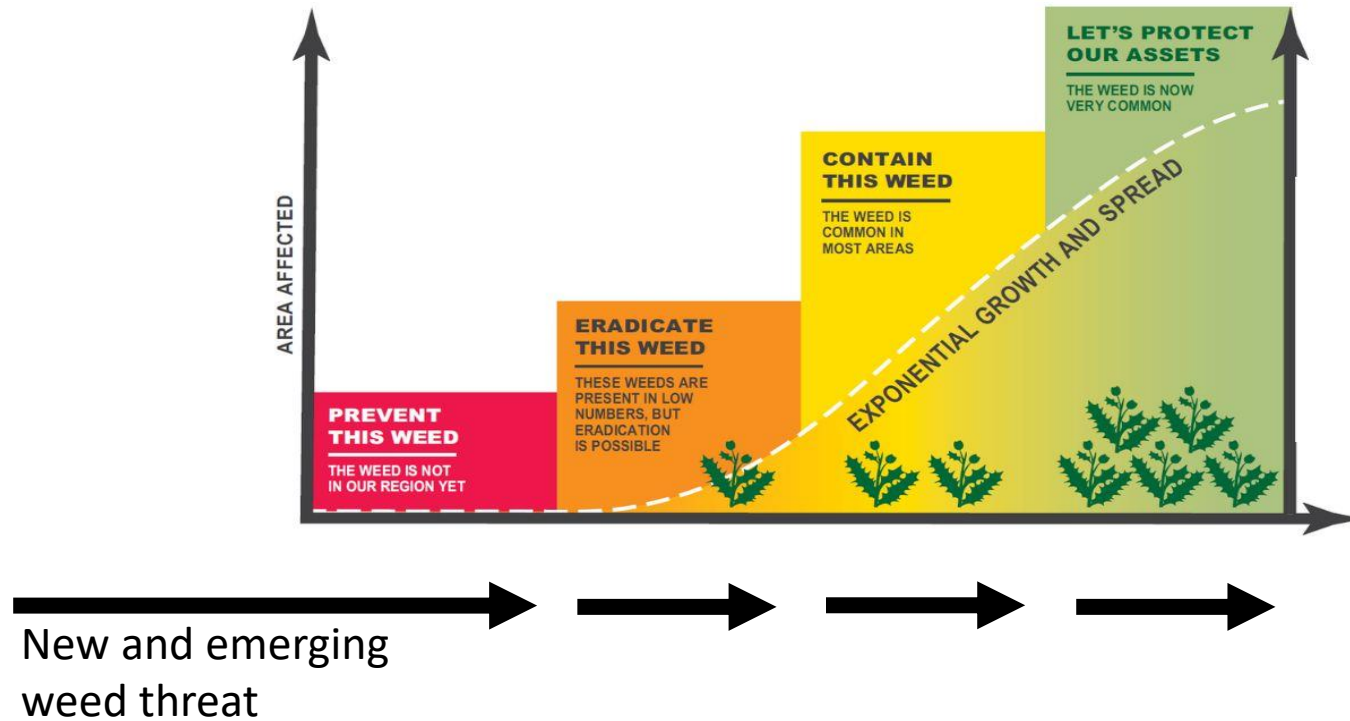
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# What is Weed Biosecurity?

- Under the Biosecurity Act 2015 we all have a shared opportunity to protect our environment, economy and industry from new weed biosecurity threats
- Weeds are categorised into four main categories
- Some weeds must be reported to a Weed Biosecurity Officer, so that an officer can safely remove, dispose of or conduct control works

# What is a PRIORITY WEED?



## PREVENTION

# Parthenium weed (*Parthenium hysterophorus*)

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- 1–1.5m high, Seeds are small (1–2mm across), long tap root
- Leaves are deeply lobed, pale green and covered with soft, fine hair
- Flowers are creamy-white (4-6mm), arranged in clusters, have five small petals and occur at the tips of the stems



Photo: Phil Blackmore



- High risk to be brought in by hay and grain from Queensland
- Looks similar to rag weed
- Do not touch: respiratory problems and severe dermatitis
- Causes tainted meat

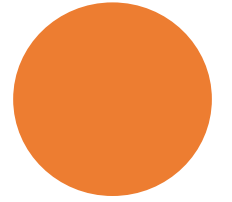


## PREVENTION

# Miconia (*Miconia calvescens*)

A Miconia infestation would be catastrophic to our region's unique biodiversity. Known as the 'Purple Plague', Miconia:

- replaces native rainforest understory vegetation
- reduces food and habitat for native animals
- reduces biodiversity
- increases the risk of erosion and landslides



## PREVENTION

Chinese violet  
(*Asystasia gangetica*  
*subsp. micrantha*)

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- Can produce seeds as early as 10 weeks after germinating
- Garden escapees, slashers, mowers
- Spread by very small seed, plant fragments, contaminated soil

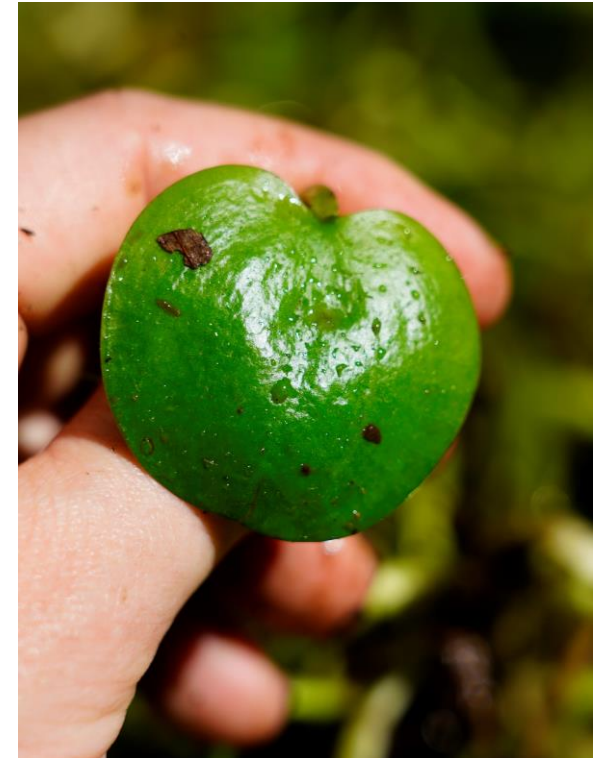


## PREVENTION

# Frogbit

*(Limnobium laevigatum)*

It has smooth, round, fleshy green leaves about 4cm across. The top side of the leaves are glossy green and the underside looks and feels like a sponge





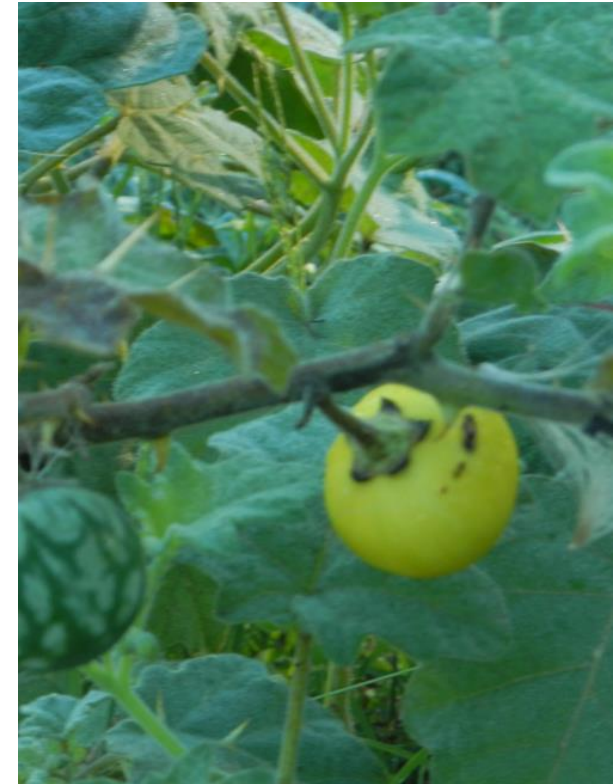
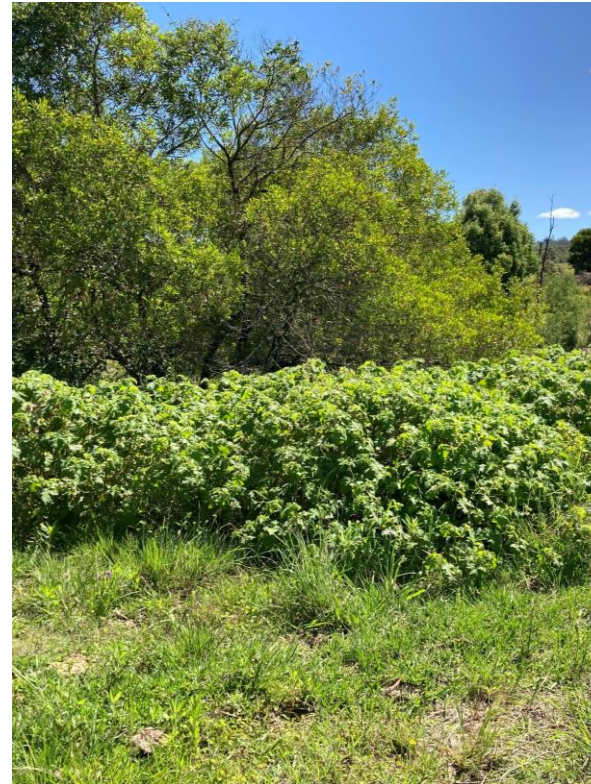
Frogbit (sometimes called spongeplant) is a floating freshwater plant that spreads quickly and smothers ponds, dams, lakes, rivers and creeks. It can spread from a tiny piece into a thick, floating mat covering the whole water surface



# ERADICATION

## Tropical Soda Apple (*Solanum viarum*)

- An erect shrub to 2m
- Covered in cream coloured spines to 12mm long on stem and leaves
- Densely hairy-lobed ovate leaves
- White flowers
- Immature fruit is pale green with stripes, mature fruit is yellow



- Extremely invasive - this plant has spread over half a million hectares in 5 years in the USA
- Reduces carry capacity
- Creates impenetrable thorny thickets, blocking access to shade and water
- Rapidly displaces other vegetation



- Native to Brazil & Argentina
- First infestation located in the Northern Rivers area at Casino in 2012
- Introduction unknown
- Plants can produce an average 45,000 seeds a year
- Mainly spread in this area is by livestock, vehicles, machinery and floods





Apple of Sodom  
(*Solanum linnaeanum*)



Devil's apple  
(*Solanum capsicoides*)



Tropical soda apple  
(*Solanum viarum*)



# ERADICATION



## Water lettuce (*Pistia stratiotes*)

- Free-floating, perennial aquatic plant that looks like an open head of lettuce
- Pale green leaves are ribbed, wedge-shaped and form a rosette. They are spongy to touch and have a velvety appearance due to the small thick hairs that cover them
- Its roots hang in the water and do not attach to the bottom
- Flowers are hidden in the centre of the plant, 1.5cm long and whitish-green in colour
- Green, oval shaped berries 5-10mm producing 4-15 seeds per berry
- Produces vegetatively and by seed

# ERADICATION



Alligator weed  
(*Alternanthera  
philoxeroides*)

- Forms dense blankets over water bodies and wetlands
- Limits recreational usage of waterways
- Blocks irrigation equipment
- Can damage infrastructure during floods
- Known to infest low lying crops and drainage channels

## Kidney leaf mud plantain (*Heteranthera reniformis*)

- Aquatic plant
- Kidney-shaped leaf
- Six-petalled flower that opens during the day - during summer and autumn



# CONTAINMENT



# Ways to stop the spread of weeds

- Safely remove weed seed material from clothes and shoes
- Utilise a wash bay for vehicles and machinery
- Complete a Visitor Risk Assessment
- When buying fodder ask for a Commodity Vendor Declaration
- Be mindful and make a Farm hygiene plan
- Allocate a Quarantine pen/paddock for livestock - 7 day
- Maintain boundary fences and gates



# High risk pathways

- Waterways
- Fence lines
- Stockyards and water troughs
- Stock routes
- Base of trees (fruit or Fig trees)



Need help with weed ID?

Need to let us know about a  
suspected Priority Weed?





**ROUS**  
COUNTY COUNCIL

• BULK WATER SUPPLY • WEED BIOSECURITY • FLOOD MITIGATION



search the website

About Rous  
County Council

Residents and  
education

The region's  
water supply

Weed biosecurity

Flood mitigation

Activities and  
events

## Now is the time to watch out for weeds

With the extensive flooding our region has recently experienced, waters can carry and introduce new weed species onto paddocks, banks and along roadsides.

DOWNLOAD THE FACT SHEET

### Quick Links


All your favourite links in one place.

 [Report a weed](#)

 [Water carters](#)

 [Supply interruptions](#)

 [Future Water Project 2060](#)

 [Council meetings](#)

 [Access to information](#)

 [Doing business with us](#)

 [Rainwater tank rebates](#)

# Got weeeeds? Get WeedWise.

Over 300 weed profiles  
in your pocket



In the app stores or online:  
[weeds.nsw.dpi.gov.au](https://weeds.nsw.dpi.gov.au)

# For further information on weed biosecurity:

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[www.rous.nsw.gov.au](http://www.rous.nsw.gov.au)

[www.lis.nsw.gov.au](http://www.lis.nsw.gov.au)

[www.dpi.nsw.gov.au](http://www.dpi.nsw.gov.au)

Or call your local Weed Biosecurity Officer at Rous County Council on

PH: (02) 6623 3800

[www.rous.nsw.gov.au/report-a-weed](http://www.rous.nsw.gov.au/report-a-weed)

[\*\*weeds@rous.nsw.gov.au\*\*](mailto:weeds@rous.nsw.gov.au)



**Tash Favaloro B.Agr**  
**Field Sales Agronomist**



# The Seed

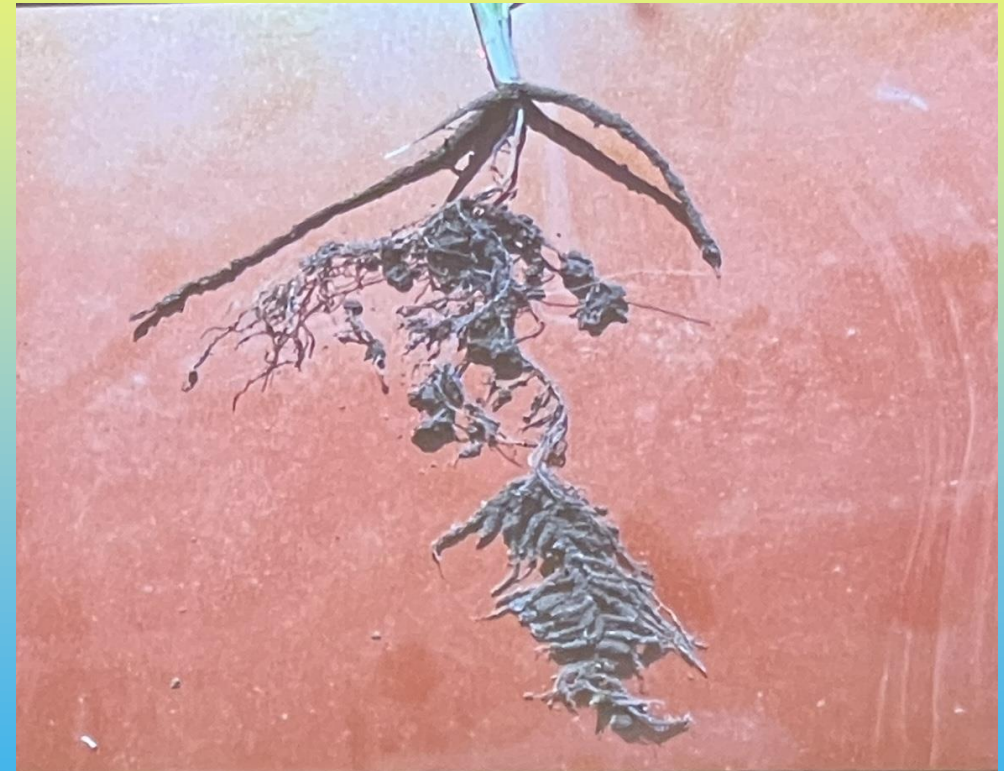
- Each species possesses a specific number of chromosomes
- Each variety (within a species) has its' own genetic traits
- Each species has specific nutritional requirements
- Each species has its' own set of **microbes** within the seed



# What does this mean?

- We need to have a hospitable environment for our seed to encourage establishment and productivity
- HOW?
  - Do you know what's going on in your soil? Ie: soil tests, pH tests, microbial tests (look up #soilyourundies <https://www.cottoninfo.com.au/soilyourundies>)

- RHIZOPHAGY in action



# 5 categories of forage plants

- Grasses
- Legumes
- Herbs
- Brassicas
- Cereals



# Jena Biodiversity Experiment

- 1, 2, 4, 8 or 16 plant species
- 0, 100 or 200kg N/Ha/Yr
  - High diversity (polyculture) crops produced greater plant yield than high N
  - High diversity plots (8 or 16 plant species) accumulated **21.8%** more soil carbon than low-diversity plots (1, 2 or 4 species)
  - Soil structure improved and plant rooting depth increased as the number of species in the mix increased



## For our pastures

- Greater diversity = higher productivity
- Reduced need for inputs (ie synthetic fertiliser and lime) as the plants get/create what they need
- Gradual soil improvement – structure and pH
- Reduced impact of pest or disease burden on pastures

## For our livestock

- Diets rich in secondary plant compounds
  - Increase microbial diversity in the gut
  - Increase ability to digest a wide variety of feeds
  - Improve feed conversion efficiency
  - Improve immune function
- Longer productive pasture window – greater diversity of species increases the length of grazing as natural plant life cycles occur

# Questions?



- Contact details:
  - [natasha.favaloro@wgau.com.au](mailto:natasha.favaloro@wgau.com.au)
  - 0419 000 928
  - [williamsseed.com.au](http://williamsseed.com.au)

Q&A

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