Coomandook Agriculture Bureau Sticky Beak Tour

10.00am - 5.30pm

followed by BBQ tea

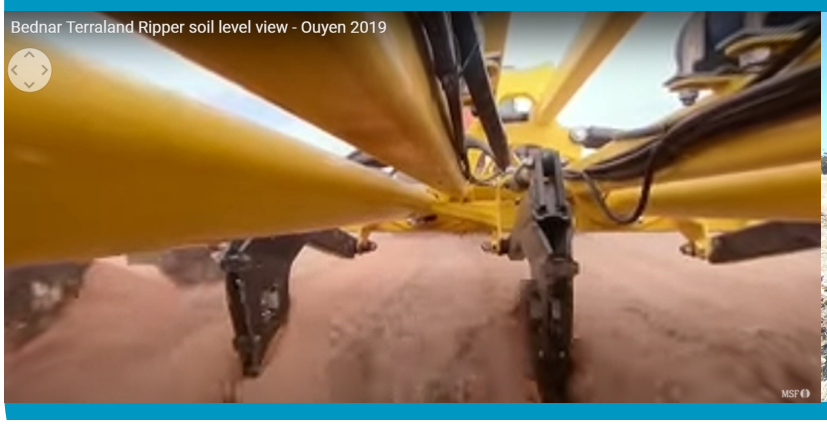
Wednesday 16th September 2020

REGISTRATIONS & further info;
tstrugnell@coorong.sa.gov.au or
text on 0427 750 050
Register by Friday 11th of Sept

What you will see & hear?

- pH & acidity trial, Veris Mapping
- Pulse Check Legume Trial
- Bednar Terraland deep ripper / delver / incorporator - with crumbling roller
- Fodder Beet and Kikuyu demo on saline ground
- Plozza Ploughing and Delving
- Sheep feedlot & containment area
- Inspection of established Kikuyu

full program over the page



Australian Government | National Landcare Program

Supported by Government of South Australia

COORONG DISTRICT COUNCIL

Coorong Tatiara Local Action Plan

LANDSCAPE SOUTH AUSTRALIA

This project is supported by Coorong District Council, through funding from the Australian Government's National Landcare Program & the Murraylands and Riverland Landscape Board, & Limestone Coast Landscape Board

Agricultural Bureau of South Australia Inc.
PATHWAY TO IMPROVEMENT

Coomandook Ag Bureau - Sticky Beak Tour Wednesday 16th September 2020				10.00am – Finish over BBQ tea		
Stop	**Item**	**Speaker**	**Organisation**	**Location**	**Time**	**Page n#**
1	**MEETING POINT** Coomandook Uniting Church Hall			3223 Dukes Highway	**10am**	
2	Kevin Lucas' **GRDC Landscapes SA Murray Darling Basin – pH, acidity and other additives trial site** *Car pool to site*	Brian Hughes Matt Howell	PIRSA Rural Solutions Coorong Platinum Ag	4005 Yumali Road YUMALI	**10.10am** – *11.10am*	Page 3
3	Mark White's **Pulse Check Site**	Brendan Wallis Navneet Argawaal	Pinion (was Rural Directions) SARDI Clare	1022 Werrimbrook Road COOMANDOOK	**11.30am** – *12.30pm*	Page 8
4	**LUNCH** **Bednar Terraland deep ripper / delver / incorporator - with crumbling roller**	Alistair Ifould Matt Howell	Ramsay Brothers Coorong Platinum Ag	296 Hawkes Nest Road MALINONG	**12.45pm –** *1.30pm*	t l·∃Ŝ MM
5	Bradley Kleinig's **Fodder Beet and Kikuyu**	Bradley Kleinig Steve Hewett	 Nutrien Ag Solutions	171 Gypsum Road COOKE PLAINS	**1.45pm –** *2.30pm*	Page 1H
6	Anthony Pfitzner **Plozza Ploughing and Delving** *collect vehicles from church*	Anthony Pfitzner Tim Dunstan	 Dunstan Ag	2473 Dukes Highway COOMANDOOK	**2.45pm** – *3.45pm*	
7	Tim Freak – Booderoo **Sheep feedlot / containment area** **Established Kikuyu**	Tim Freak		'Booderoo' 572 Flowery Plains Road COOOMANDOOK	**4.15pm – 5.15pm**	Page 1H
8	**BBQ TEA & FINISH**	Tim Freak		Flowery Plains Road	**EVALUATION FORM PLEASE**	Page 15

Soil Acidity basic rules – Brian Hughes, PIRSA Rural Solutions

Why are soils acidifying?

Acidifying fertilisers- most forms of N, elemental S

Product removal- hay, grain, livestock products

N leaching – shallow rooted plants worse

Legumes can increase in some situations

Impacts

Rhizobium cannot persist- linked to Mo/ N deficiency in plant

Toxic Al reduces root growth

Some nutrients lost or reduced availability/ tie-up- P, Ca, Mg. K, Cu, Zn, B, Mo

Critical pHCa (reads about 0.8 less than pHw)

<pHCa 5.5- need to start thinking about acidity as an issue, if surface pH drops below will see acidity creeping deeper into soils, particularly sandy soils

<pHCa 5.0- highly sensitive plants including lucerne, beans, lentils affected

< pHCa 4.8- toxic Al starts to accumulate- sensitive plants affected –phalaris, barley

< pHCa 4.5- slightly tolerant plants can be affected- sub-clover, wheat-var

<pHCa 4.0- Fe becomes released, tolerant plants affected – lupins, oats

Targets
Keep surface pH at 5.5 or better

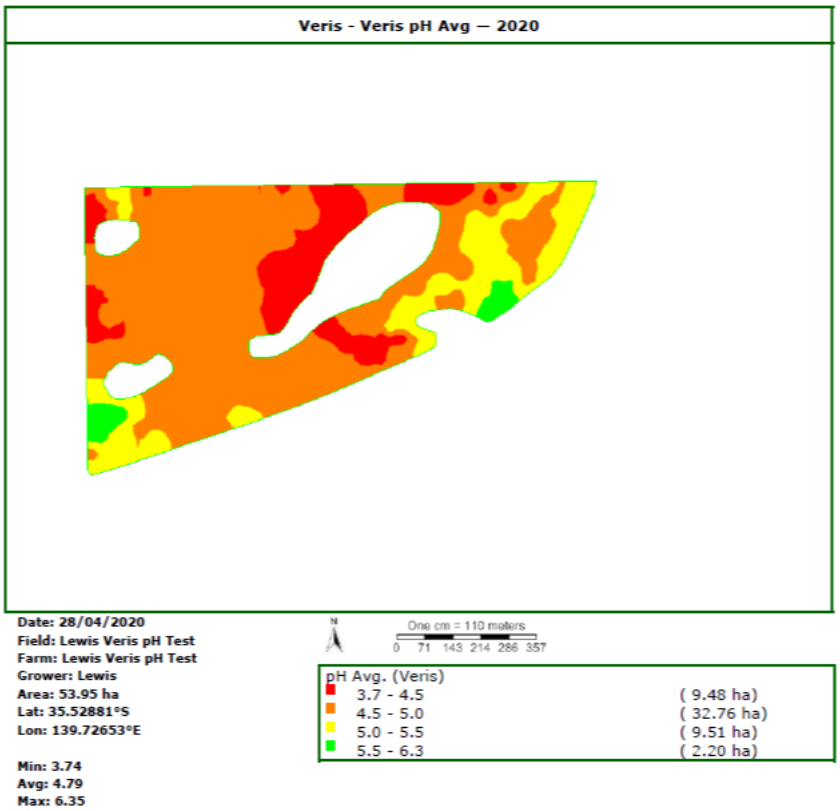
Sub-surface at 4.8-5.0 or better

Avoid sub-surface acidification developing

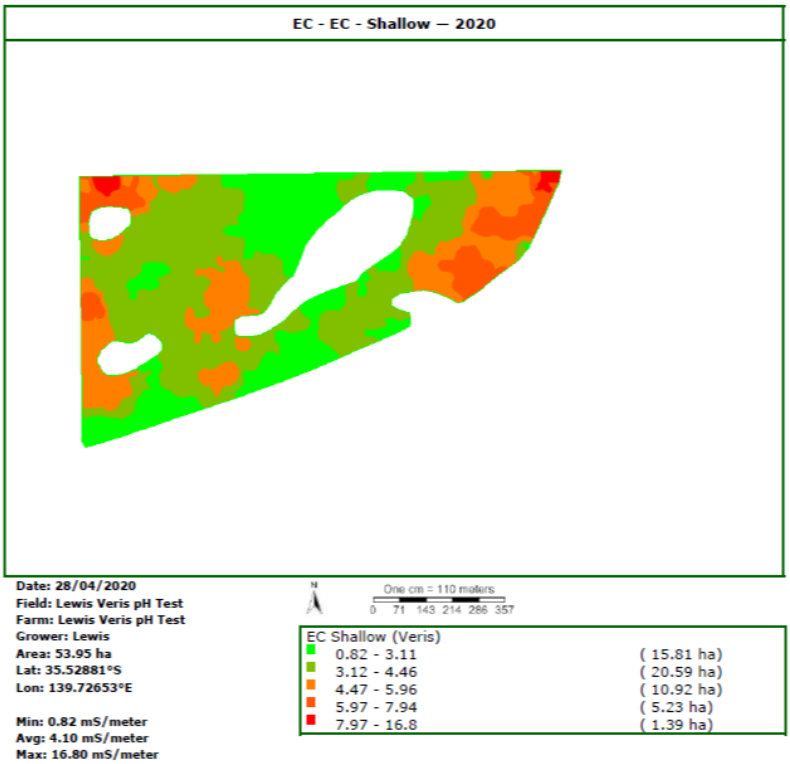
New soil acidity web site www.acidsoilssa.com.au

- Information on acidity, liming, causes and effects- fact sheets and bulletins
- Tools for comparing lime sources, auditing farm practices for acidification rates and economic impact of acidity based on yield and current pH.
- Current research and technical presentations
- Lime source and quality information

Lucas Paddock and Liming Trials-*Veris pH maps*



EC map



Liming Trial

Aims- comparison of liming products, rates, cultivation, and other practices including ripping, clay and bio-char addition on pH profiles

Yumali	est 2020	pHCa 0-5cm 5.0, 5-10cm 4.6, 10-15 cm 4.8, 15-25cm 4.8, 25-40 cm 6.6	40cm Sand/Clay	famer sown	sown mid June 2020 Compass barley

Treatments

Tmt	Product and rate	Material
1	sulphur cultivated	0.75 T/ha
2	control	
3	low lime surface	1 T Agricola
4	medium lime surface	3 T Agricola
5	high lime surface	5 T Agricola
6	medium lime cultivated	3 T Agricola
7	high lime cultivated	5 T Agricola
8	deep rip	
9	cultivated control	
10	lime 2 Cawtes surface	3T Cawtes
11	lime 3 Henschke surface	3T Henschke
12	deep rip + cultivate + lime	3 T Agricola
13	clay cultivate	100T/ha
14	biochar + lime + cultivate	3T Kool Terra + 3T Agric
15	spare 1	may use inclusion plates +/- lime 2021
16	spare 2	

Cultivation using rotary hoe to 10cm

Acknowledge

Sponsors and Partners including

GRDC GRAINS RESEARCH & DEVELOPMENT CORPORATION

SOUTH AUSTRALIA Government of South Australia Primary Industries and Regions SA

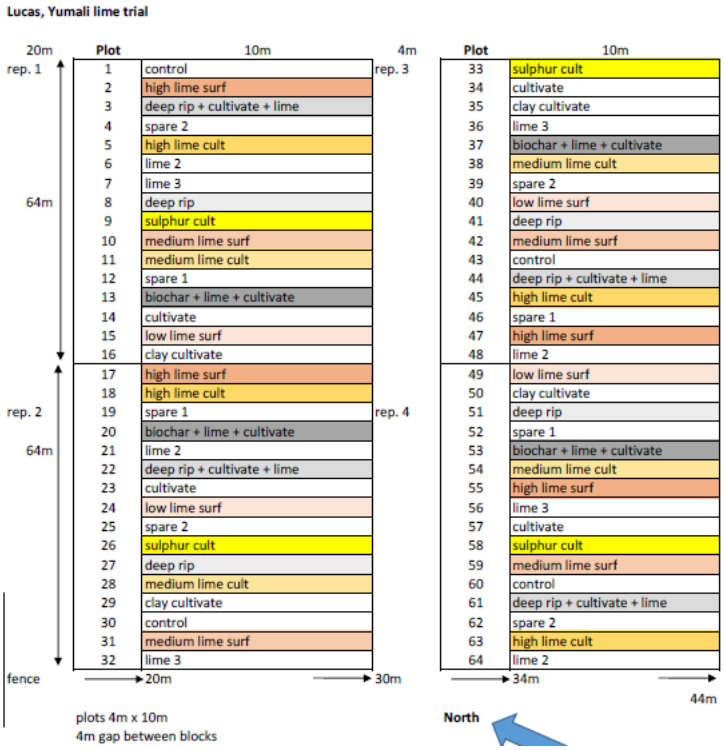
Government of South Australia Department for Environment and Water

Platinum Ag

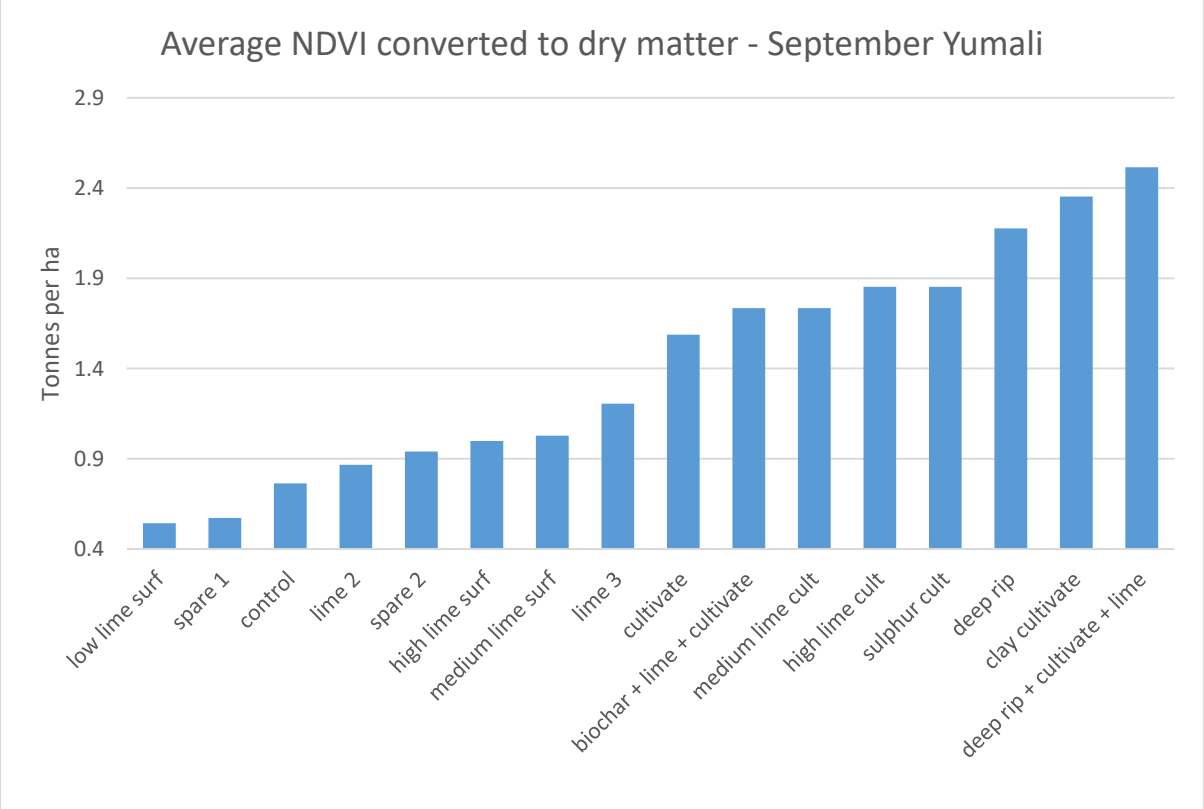
Kevin Lucas

Landscape Boards

Trial Layout



Results to date- Dry Matter from NDVI September



Liming Demo site map

Yumali Demo	2020	pHCa 0-5cm 4.9, 5-10cm 4.46, 10-15 cm 5.6, 15-25cm 6.6	15 cm Shallow sand/Clay	famer sown	sown mid- June 2020 Compass barley

Lucas demo trial

North

Strip	Product and rate	Material
0	control (outside pegged area)	
1	till + lime + gypsum	3 T Agricola + gypsum
2	till	
3	till + lime	3 T Agricola
4	control	
5	medium lime	3 T Agricola
6	sulphur	1 T/ha
7	control	
8	high lime	5 T Agricola
9	low lime	1 T Agricola
0	control (outside pegged area)	

strip size 15 x 4m, gypsum 3.67 T/ha
(top of clay dispersed)

BUFF PBR

POTENTIAL MALT BARLEY

ALTERNATIVE TO:
LITMUS
LA TROBE
ROSALIND
SPARTACUS CL

FARMER TO FARMER TRADE APPROVED

WESTERN AUSTRALIA 2020

INTERGRAIN

Variety Overview

BUFF is a white aleurone, acid soil tolerant variety and is ideally suited to the acid soil/ high aluminium environments of WA. BUFF is broadly adapted and offers moderately good grain plumpness and has good early vigour. The variety has a similar disease susceptibility profile to LITMUS. It is susceptible to powdery mildew and spot form net blotch, although has moderate resistance (MRMS/MS) to net form net blotch.

BUFF is higher yielding than LITMUS in both neutral and acidic soil types.

BUFF has recently been accepted into the Barley Australia Malt Accreditation program with earliest possible accreditation in 2022.

BUFF is available through farmer to farmer trade, your local reseller or InterGrain Seedclub member.

Flexing its muscles in acidic soils.

VARIETY AT A GLANCE

- HIGH YIELD
- WHITE ALEURONE
- MATURITY: QUICK SPRING
- GRAIN PLUMPNESS: MODERATELY GOOD
- GOOD NET FORM NET BLOTCH RESISTANCE (PATHOTYPE DEPENDENT)

For more information please contact:
Georgia Trainor 0439 093 166 gtrainor@intergrain.com

PLANT FEATURES

	Classification	Maturity	Coleoptile Length	Lodging Tolerance	Height	Head Loss Risk	Grain Plumpness
BUFF	Potential Malt	Quick	Medium	Poor	Medium	Medium	Mod. Good
LA TROBE	Malt	Quick	Short	Medium	Mod. Short	Medium	Mod. Good
SPARTACUS CL	Malt	Quick	Short	Strong	Mod. Short	Low	Good
SCOPE CL	Malt	Mid	Short	Poor	Tall	High	Fair
ROSALIND	Feed	Quick-Mid	Short	Strong	Mod. Short	Low	Mod. Good
LITMUS	Feed	Quick	Short	Poor	Medium	Medium	Mod. Good

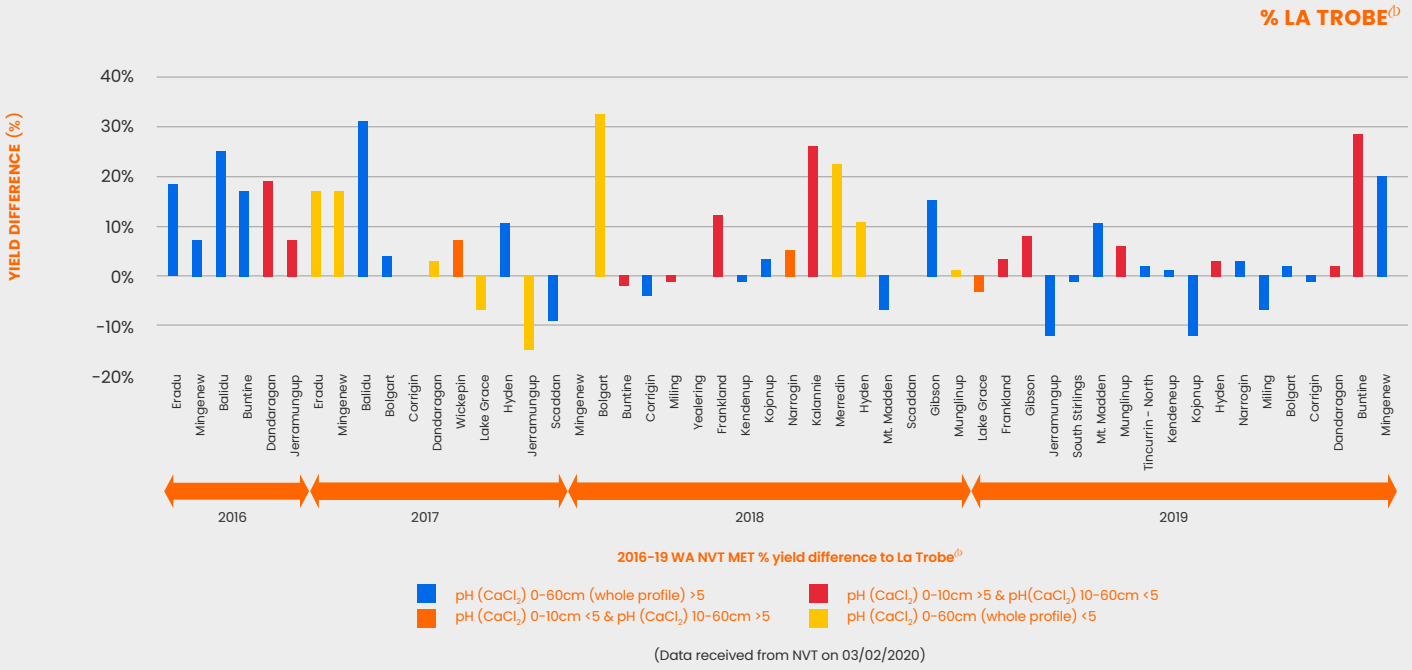
Source: 2020 Barley variety sowing guide for Western Australia. BUFF features and all variety Plant Height information - InterGrain Barley Breeding.

DISEASE

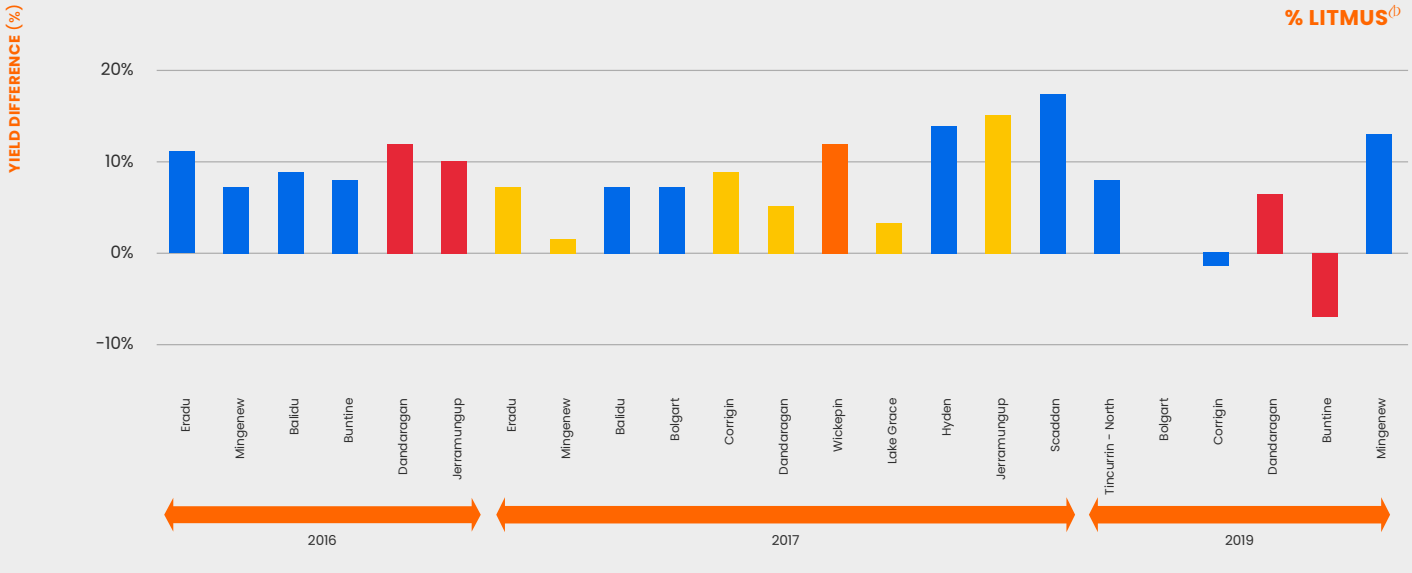
	Scald	Net Form Net Blotch	Spot Form Net Blotch	Powdery Mildew	BYDV	Leaf Rust
BUFF(Φ)	S	MRMS/MS	S	S	MRMS/S	MSS
COMPASS(Φ)	SVS	MRMS/MSS	MSS	MRMS	MSS	S
LA TROBE(Φ)	SVS	MRMS/MSS	SVS	MSS	S	MS
ROSALIND(Φ)	MS	MR/MSS	S	MRMS	MR/MS	MR
SCOPE CL(Φ)	S	MR/S	MSS	R	MRMS/S	MSS
SPARTACUS CL(Φ)	SVS	MRMS/MSS	SVS	MR	MSS	MSS
LITMUS(Φ)	SVS	MSS	S	MR	S	S

Source: 2019 NVT Pathology Disease consensus ratings. Disease data reference: R = Resistant, RMR = Resistant to Moderately Resistant, MR = Moderately Resistant, MRMS = Moderately Resistant to Moderately Susceptible, MS = Moderately Susceptible, MSS = Moderately Susceptible to Susceptible, S = Susceptible, SVS = Susceptible to Very Susceptible, VS = Very Susceptible. * Pathotype dependent, () = Higher disease at some sites, p= provisional rating.

YIELD PERFORMANCE



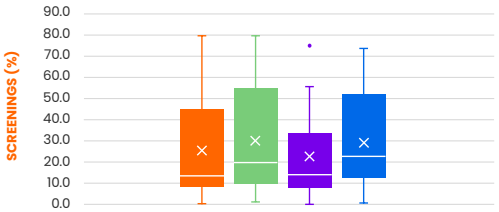
(Data received from NVT on 03/02/2020)



(Data received from NVT on 03/02/2020)

GRAIN QUALITY

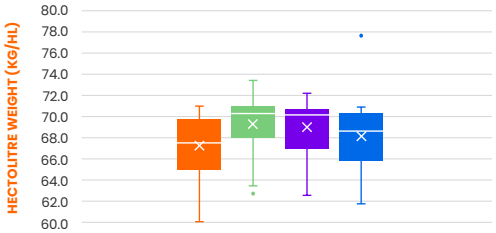
SCREENINGS



2016-19 WA NVT Screenings (<2.5mm) (%)

(Data accessed from the NVT Online website on 13/02/2019.)

HECTOLITRE WEIGHT



2016-19 WA NVT hectolitre weight (kg/hl)

(Data accessed from the NVT Online website on 13/02/2019.)

BUFF$^{\Phi}$ LA TROBE$^{\Phi}$ LITMUS$^{\Phi}$ ROSALIND$^{\Phi}$

SEED AVAILABILITY

Seed is available through farmer to farmer trade, your local reseller or Seedclub member.

For more information please contact:

Georgia Trainor 0439 093 166 gtrainor@intergrain.com

PBR/EPR

BUFF$^{\Phi}$ is protected by Plant Breeder's Rights and is subject to an end point royalty of $3.50/tonne GST Exclusive. BUFF$^{\Phi}$ is an InterGrain variety containing a germplasm licence from Agriculture Victoria Services (AVS), bred by David Moody and the InterGrain Barley Breeding team.

Why the TERRALAND?

MAIN ADVANTAGES OF THE MACHINE

- The machine main frames are made of high strength Alform steel.
- The triple ringed angle of the working tines ensures easy soil penetration and the ideal throughput of the machine.
- An extremely high machine throughout thanks to the frame clearance and a tine distance.
- The Quick-Change system for the chiwsels is a smart solution that enables the swift change of the machine operating components.
- The rear tandem spiky rollers can be set hydraulically and crush the final persistent clumps.
- Side rollers and side shields guarantee a level field without any visible passes.
- Hydraulic auto-reset system of tines for extremely heavy or stony soils.

TO version

- The integrated axle, placed between the working tines, will even allow you to work without rear tandem spiky rollers.
- The CUTTERPACK trailed packer can be connected for the final clod crushing and seedbed preparation.
- The PRESSPACK trailed packer can be connected for final and even compaction as well as clod crushing.

AGRONOMIC ADVANTAGES OF THE MACHINE

- Loosens deeper than standard cultivators with a max. depth of up to 55 cm, which results in the roots having access to more moisture.
- There is more air in the soil which is needed to create a better soil climate.
- Lower soil layers are not brought up to the higher soil profiles; mixing takes place in the upper section of the soil layers.
- Plant residue is covered over after the harvest.
- Livestock manure and digestates from biogas stations are easily incorporated in one pass.
- Increased rainwater absorption that in turn eliminates puddles and long-term wet patches.
- Levels the soil surface after the previous field operations, or tracks made by heavy machinery.
- Recompacts the soil to preserve moisture in the summer by using the detachable PRESSPACK, or final crushing work for seedbed preparation by using the CUTTERPACK.

"We have renovated 750 ha, all in canola. It has decreased the difference in soil profile, mixed the organic mass, brought the pottasium to upper soil profile and soil aeration. After the rip there is a big difference in soil profil ecomparede to non ripped. The areas where we used TERRALAND the plants of canola have a nice even length, thick stubbles, nicer process of flowering proceas, stronger plants with massive straight root system, In genelar increase of bio mass. The depth was controlled on 350–450 mm depending on which part of the arable areas. Definately we will continue with this technology and Bednar machinery in future."

Peter and Leigh Doltan

Totad Gin Farming | Merredin | Western Australia (Australia)
8000 ha | TERRALAND TO 6000

TERRALAND TN

BENEFITS WHICH RESULT IN SAVINGS AND GREATER YIELDS:

- **Quality deep tilling in one pass** – One pass of the Terraland means even faster soil loosening below the plough pan. It also covers over all plant residue, livestock manure and digestates etc.
- **More water and air** – By tilling with the Terraland, air gets into the soil and the impermeable layers are broken up, allowing the root system to get a greater reach.
- **Less time needed** – By using the Terraland, you can significantly reduce the time required in comparison to traditional ploughs. The Terraland can prepare the soil in a way that minimises the need for any further soil preparation work. The soil remains clod-free and loosened.
- **Deeper soil tillage and lower fuel consumption –** Thanks to the triple angle tine geometry, it is easy to till deeper soil layers at affordable fuel costs.
- **The final touches –** To maximise the finish on the job, you can opt for the Terraland TN_PROFI with cutter section. To maximise the finish on the work TERRALAND TO, you can attach the Cutterpack or the Presspack to the machine.
- **The costs associated with the spare parts** that are used, are significantly lower than those for traditional ploughs.

Coorong Tatiara

Sustainability, Agriculture & the Environment

Fodder Beet and Kikuyu on saline soil

This fact sheet covers the steps undertaken and results obtained from seeding Fodder Beet and Kikuyu on saline soils at Cooke Plains over the 2019 –2020 season

Site conditions

The Fodder Beet and Kikuyu demonstration site is located on Brad Kleinig's property, Gypsum Road Cooke Plains. The site is affected by dryland salinity, with sandy to heavy loam soils, with a coverage of volunteer samphire and annual grasses prior to seeding.

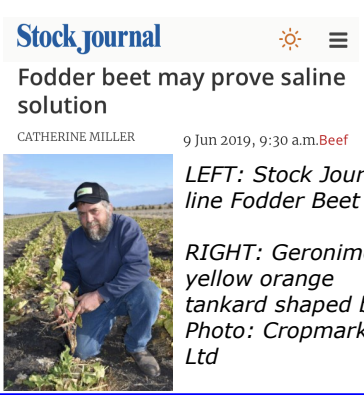
The soil ECe was in the range of 4-14 dS/m with a pH of 7.89. It is estimated that the saline unconfined aquifer is around 3 metres below the soil surface.

Left: Site pre seeding
Photo: Kleinig

Fodder Beet

Two varieties of Fodder Beet were sown on this site; Cropmark varieties Geronimo and Summo. Local producers were interested in trialing fodder beet after hearing about successful demonstrations occurring in the mid and lower South East. Several articles appeared in the Stock Journal over 2018 and 2019 about seeding fodder beet. Salt was being added to these sites as a treatment to amend site conditions to enhance establishment.

Geronimo originates from France. It has a yellow-orange tankard shaped bulb that sits approximately 45% above the ground. The crop can be grazed in situ, or be lifted and fed whole or chopped. It is suitable for grazing by sheep and cattle.



Stock journal

Fodder beet may prove saline solution

CATHERINE MILLER 9 Jun 2019, 9:30 a.m. Beef

LEFT: Stock Journal on line Fodder Beet article

RIGHT: Geronimo yellow orange tankard shaped bulb
Photo: Cropmark Seeds Ltd

Geronimo Fodder Beet Agronomic Traits

Sowing season	Spring
Sowing rate (seeds/hectare)	80,000-100,000
Maturity (days to grazing)	200+
Bulb % above ground	+/- 45%
Dry Matter %	15 - 17%
Disease resistance	Very good

Under optimum conditions **Summo** is a high yielding dual purpose grazing and lifting fodder beet. It has large red conical shaped bulbs which sit approximately 40% out of the ground. Summo fodder beets are suitable for grazing or lifting and can be fed whole or chopped.

Summo Agronomic Traits

Sowing season	Spring
Sowing rate (seeds / hectare)	80,000-100,000
Maturity (days to grazing)	200+
Bulb % above ground	+/- 40%
Dry Matter %	18 - 20%
Disease resistance	Very good

RIGHT: Summo large red conical shaped bulb

Photo: Cropmark Seeds Ltd

Seeding technique

The site was deep ripped with a rabbit ripper and seeded with Geronimo and Summo Fodder Beet with a shearer trash culti drill with press wheels on the 19th of October 2019 following 20mm of rain.

The recommended seeding rate of 100,000 seeds per hectare was used. The site was sprayed with Talstar the day after seeding. The fertiliser application was 350 kg/ha of a DAP / urea blend.

The germination rate was fair, with more of the Geronimo variety emerging than the Summo. Plants persisted well until the very hot and dry conditions in early summer. Some plants died and others lost their older leaves. The surviving plants persisted in spite of the lack of rain over summer. Since rainfall returned in April and May 2020 the fodder beet plants have recovered well. The plants performed well on the moderately saline soils, but not as well on the extremely saline areas.

The plants were observed during frosty conditions in early June and appeared unaffected.

What could be done to improve the result next time?

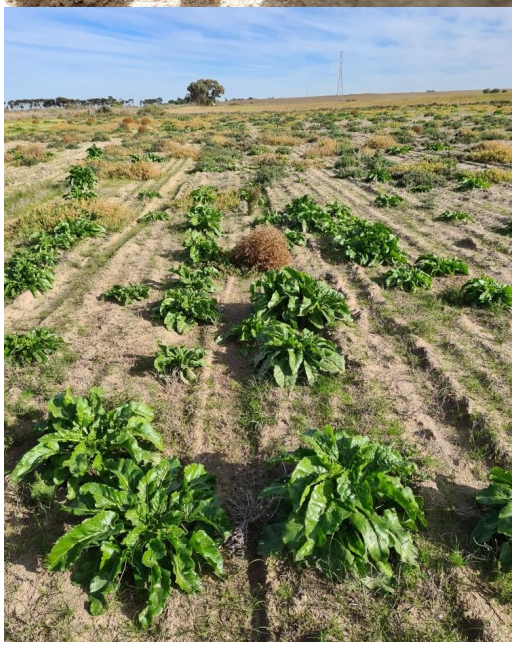
Landholder Brad Kleining said, 'I think the main thing required is a precision seeder to get a more even germination of fodder beet plants. Also maybe a follow up insecticide spray as some pest damage was visible after Christmas. I would be interested in doing another trial this year as I see the potential for growing fodder beet in our area.'

LEFT AND BELOW: The growth stages of Fodder Beet over the 2019 / 2020 season on the Cooke Plains site

Photos: Kleinig and Strugnell

LEFT: A Geronimo Fodder Beet with the beet pushing out of the ground

Photos: Kleinig and Strugnell



LEFT: Fodder Beet continuing to grow well during frosty conditions in early June 2020

Photo: Brad Kleinig

Kikuyu

Kikuyu is a prostrate growing perennial grass. Most growth occurs in spring, summer and autumn. It is suited to fertile, well-drained soils. In favourable conditions the runners spread rapidly, making kikuyu a very suitable species for erosion control on sandy soils.

Kikuyu responds well to nitrogen fertiliser.

Kikuyu Grass Agronomic Traits

Sowing season	Spring to early autumn
Sowing rate (seeds / hectare)	1 - 4 kg / hectare
Variety	Whittet
Nutrient deficiencies	Nitrogen, phosphorus, potassium, sulphur
Insect Pests	Army worms, sod web worms, african black beetle
Animal health advice	Occasionally nephrosis or hypocalcaemia in ruminants, due to oxalates. Rare nitrate poisoning in cattle after rapid growth after dry conditions. Not suitable for horses.

RIGHT: Kikuyu Grass

Photo: DPI NSW

Seeding technique

The Kikuyu Grass was seeded on the 19th October 2019 following a 20mm rainfall event at 2 kg per hectare with approximately 50 kg/ha of DAP / urea blend. The Kikuyu had a very strong density at germination but the hot, dry spell in early summer hit it the seedlings hard with around 50% plants dying, and 100% on the extremely saline ground). Like the Fodder Beet, the remaining plants held on well despite the dry summer and have shown good activity since the break of the season in April / May 2020. Landholder Brad Kleinig said, 'Obviously the Kikuyu will go mildly dormant as the cool weather hits but I'm looking forward to seeing how it goes in spring once the soil temperatures rise.'

What could be done to improve the result next time? 'Probably spraying out the Potato Weed next time will leave more moisture for struggling plants. Otherwise I was happy with the result. With a wetter summer I think it would go really well. Like the fodder beet I am interested in sowing Kikuyu again.'

ABOVE: Seedling Kikuyu Grass 2019 Photos: Brad Kleinig

LEFT: Kikuyu Grass with mixed grasses June 2020

Useful Links

Saltland Agronomy
Information on saltland pastures and the saltland pasture redemption project
https://www.coorong.sa.gov.au/council-services/coorong-tatiara-local-action-plan/soil-health-and-dryland-salinity

Fodder Beet
Follow the Forage Products tab to Fodder Beets
https://www.cropmarkseeds.com

Kikuyu Grass
https://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/species-varieties/pf/factsheets/kikuyu

Coorong Tatiara Local Action Plan
P: 1300 785277
E: tstrugnell@coorong.sa.gov.au
W: https://www.coorong.sa.gov.au/council-services/coorong-tatiara-local-action-plan/soil-health-and-dryland-salinity/saltland-pastures

This project is supported by the South Australian Murray-Darling Basin Natural Resources Management Board through funding from the Australian Government's National Landcare Program and NRM levies

Participant evaluation form - agricultural event

Please take a few minutes to fill in **both pages** of this questionnaire. Your input will help us understand the usefulness of this event and how we might improve future events of thistype.

Event name: _____ **Your postcode:** _____

Please tick if you are:

- ❑ Primary Producer
- ❑ Land Manager
- ❑ Farm Worker
- ❑ Researcher
- ❑ Agronomist
- ❑ Agricultural Advisor
- ❑ Agricultural sales
- ❑ Project Officer
- ❑ nrm Professional
- ❑ Government Employee
- ❑ Other:

What is the size of the property you manage? _____

Please indicate:

1) What gender do you identify as? ❑ Male ❑ Female ❑_____

2) With which ethnic group do you identify?
❑ Non-Indigenous Australian ❑ Indigenous Australian or Torres Strait Islander ❑ Other _____

3) Age: _____years

Please mark the response which best represents your agreement with the following statements

	Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
The mix of presentation and participation/exercises was right for me					
The level of information/training was suitable for me					
The amount of information/training was suitable for me					
The materials (e.g. handouts and notes) are useful to me					
The training/workshop/event was well conducted					
I learned something from interacting with the other participants					
I would recommend this training to other people					
Participation in this training workshop has increased my:					
Awareness of the topic					
Knowledge of the topic					
Knowledge to change how I do things					
Skills in the topic					
Skills to change how I do things					
Capacity to make better decisions					
Commitment to change my management and/or adopt new practices					
How many Hectares or Acres will you adopt the practices on?	Ha or Acres				

Would you be willing to be contacted to participate in follow up surveys on how you have been able to apply information from this event on your property and the benefits that have occurred?

❑ Yes ❑ No If yes please provide name and contact details below

Name:_____Phone:_____

Email:_____

Australian Government | National Landcare Program

LANDSCAPE SOUTH AUSTRALIA MURRAYLANDS AND RIVERLAND

Please provide written responses to the following questions about the training/workshop

What is the most useful thing you gained or learned from attending this workshop?

What future topics for field days, workshops or training events would be beneficial to you and your farm business?

Is there anything that could be added or changed to improve future events or any other comments?

Thank you for taking the time to complete this survey. Your input will help us understand the usefulness of this event to you and how we might improve future events of this type.

This project is supported by the Murraylands and Riverland Landscape Board through funding from the Australian Government's National Landcare Program and the Landscape levies.