ASHEEP Pasture Variety Trials Summary 2021

Article by India Warren-Hicks (South East Agronomy Research)

In 2020, ASHEEP engaged the services of South East Agronomy Research to research profitable pasture varieties in the Esperance Port Zone as part of a Meat & Livestock Australia Producer Demonstration Site project.

Figure 1: Trigonella, Grass Patch 14/09/21

2020 saw the first year of the trials at three locations: Grass Patch, Salmon Gums and the Neridup Sandplain. The ASHEEP committee, key pasture agronomists and South East Agronomy Research decided the Salmon Gums trial would be relocated to Cascade. With the tough 2020 season in Salmon Gums and few farmers left working with sheep, it was agreed the trial would be more suitable in Cascade.

The sites for **2021** were in Grass Patch, Cascade, and the Sandplain. Prior to sowing soil cores were taken at the three sites. The trials were sown with a 1.8m single plot cone seeder with knife points and press wheels. The 2021 trials had a fantastic start getting up and away well with good soil moisture at sowing and decent rainfall following. It should be noted that all varieties in each trial were sown on the same date, with some species in particular the Vetch and Clovers generally requiring a late April sowing date. Take this into account when looking at the dry matter (kg/ha) results below.

2021 Sites	Grass Patch (David Vandenberghe)	Cascade (Simeon Roberts)	Neridup/Sandplain (John Wallace)
Trial Layout	15 varieties x 4 replications	15 varieties x 4 replications	15 varieties x 4 replications
Sown	20th May	19th May	13th May
Soil pH (CaCl)	7.4 (0-10cm) to 8.7 (30-40cm)	5.8 (0-10cm) to 6.5 (50-60cm)	6.8 (0-10cm) to 7.7 (50-60cm)
Sowing Details	Cereals: 60L Flexi-N + 80kg Agstar Legumes: 50kg Big Phos + 10kg required Alosca	Cereals: 50L Flexi-N + 80kg Agstar Legumes: 50kg Big Phos + 10kg required Alosca Sparticus Barley treated with 1.5L/t Systiva	Cereals: 100L Flexi-N + 120kg Agstar Legumes: 50kg Big Phos + 10kg required Alosca Planet Barley treated with 1.5L/t Systiva
Varieties/Rates	Sulla @ 5kg Trigonella @ 8kg Express Grazing Oats @ 70kg Express Grazing Oats @ 50kg + RM4 Vetch @ 20kg Tillage Radish @ 6kg Snail Medic @ 12kg Leafmore Grazing Brassica @ 5kg Casbah Biserulla @ 6kg RM4 Vetch @ 25kg Mawson Subclover @ 6kg Cobra Subclover @6kg SARDI Grazing Lucerne @ 6kg Tetila Ryegrass @ 15kg BALL ThumpA Ballard Mix @ 20kg BALL SalinA Ballard Mix @ 20kg	Sparticus Barley @ 80kg RM4 Vetch @ 25kg Capello Vetch @ 25kg Express Grazing Oats @ 70kg RM4 Vetch @ 20kg + Express Grazing Oats @ 50kg Trigonella @ 8kg Tetila Ryegrass @ 15kg Cavalier Medic @ 12kg Snail Medic @ 12kg SU Tolerant Sultan Medic @ 6kg Casbah Biserulla @ 6kg SARDI Grazing Lucerne @ 6kg Cobra Clover @ 6kg Ball ThumpA Ballard Mix @ 20kg BALL SalinA Ballard Mix @ 20kg	Illabo Wheat @ 100kg Planet Barley @ 80kg Capello Vetch @ 25kg RM4 Vetch @ 25kg Tetila Ryegrass @ 15kg Express Grazing Oats @ 80kg Express Grazing Oats @ 60kg + Tetila Ryegrass @ 15kg SARDI Grazing Lucerne @ 6kg SARDI Series 7 Lucerne @ 6kg SARDI Series 10 Lucerne @ 6kg Casbah Biserulla @ 6kg Dalkeith Subclover @ 6kg Leafmore Grazing Brassica @ 5kg Franno Serradella @ 8kg BALL TearA Ballard Mix @ 20kg

Note:
The Ballard BALL SalinA mix includes Scimitar Burr Medic, Balansa Clover and Tetraploid Italian Ryegrass.
The Ballard BALL TearA mix includes Crimson Clover, Tetraploid Ryegrass, Pink Serradella, Bladder Clover and Gland Clover.
The Ballard BALL ThumpA mix includes Rose Clover, Bladder Clover, Soft Pink Serradella, Sub-clover and Tetraploid Italian Ryegrass.

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10 and 16 weeks after sowing pasture cuts were taken of species that had established adequately. These cuts were dried, and the numbers converted to dry matter kg/ha. Dry matter (DM) is the portion of feed remaining once water has been removed. Dry matter contains the nutrients: energy, protein, fibre, minerals and starch.

Analysis on the 16 weeks after sowing cuts was conducted by CSIRO. Crude protein and dry matter digestibility were the two focus results for these trials. Crude protein includes both true protein and non-protein nitrogen which rumen microbes can convert to protein. Crude protein is simply the proteins the animal needs. It is calculated as follows; CP= Nitrogen x 6.25

Dry matter digestibility (DMD) is expressed as a percent. 100% DMD means all the feed has been digested. Any value of 70% or greater is considered good.

Throughout the season ASHEEP had two field walks with the winter field day to Cascade and the spring field day to the sandplain. Both days had a great turnout allowing for robust discussion and interest to continue pasture research in Esperance in 2022.

Franno Serradella, Sandplain 07/09/21

Neridup (sandplain)

The sandplain site is typical of the non-wetting deep sands in the high rainfall zone. It has low N, P and K from the surface down to depth. The trial was sown into good moisture, and majority of the varieties established well. The three Lucerne species, Casbah Biserulla and Dalkeith Sub clover were slow to establish and put on minimal biomass throughout the season. By the final pasture cuts at 16 weeks the same trend as at 10 weeks is recorded. The standout variety being Planet Barley with 7250kg/ha of dry matter closely followed by the Express Oats and Tetila Ryegrass combination at 6750kg/ha. The cereals at this trial site were outstanding. The Capello and RM4 vetch was putting on biomass well but like the Leafmore Brassica was setback from broadleaf spray drift.

Cascade

The Cascade trial site saw an excellent establishment of all varieties other than Casbah Biserulla. At 10 weeks after sowing pasture cuts were taken with growing season rainfall sitting at 250mm. The Spartacus Barley was the standout at this point in the trial with 1700kg/ha of dry matter. This was closely followed by RM4 Vetch at 1600kg/ha, and the mix of RM4 Vetch and Express Oats with 1500kg/ha of dry matter. The same trend follows into the 16WAS cuts with the standout being the mix of RM4 Vetch and Oats and Oats standalone both at 5100kg/ha of DM. This is closely followed by RM4 Vetch with 4900 kg/ha of DM. The Sparticus Barley and Tetila Ryegrass were also noteworthy putting on good biomass and subsequent dry matter at this later point in the season.

Grass Patch

The Grass Patch trial was sown into a sandy loam over clay soil type. The site has good nutrition and soil structure from surface down to depth. All species established well and put on good biomass other than Sulla, which dry matter cuts could not be taken. Unfortunately, as the season progressed by September the site had started to dry out and species were dying off. The standout variety from this trial at 16 WAS cuts being Express Oats with 8900 kg/ha DM. This was followed by Tillage Radish at 5000 kg/ha DM.

Images:
A mat of Tetila Ryegrass, Grass Patch 13/08/21
Tillage Raddish, Grass Patch 10/09/21

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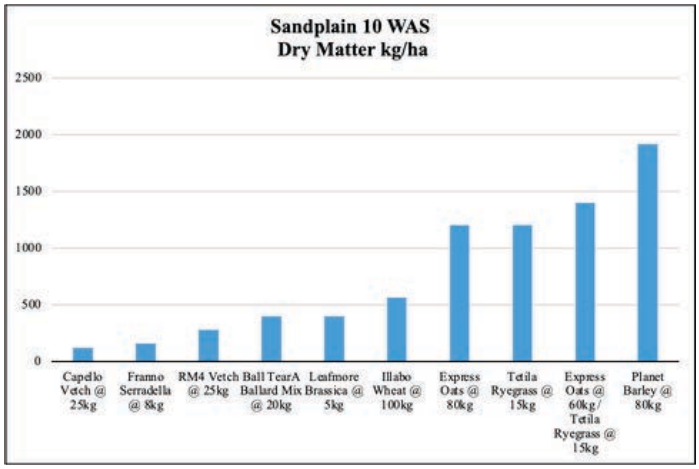
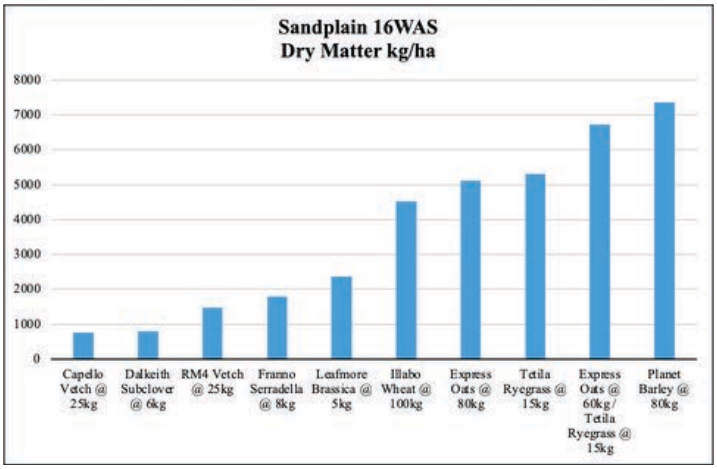
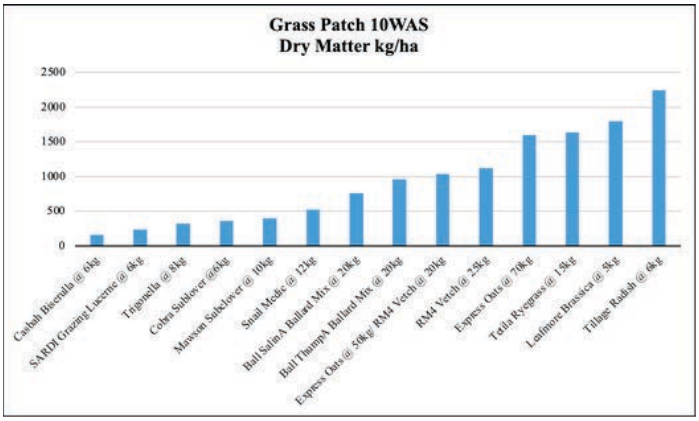
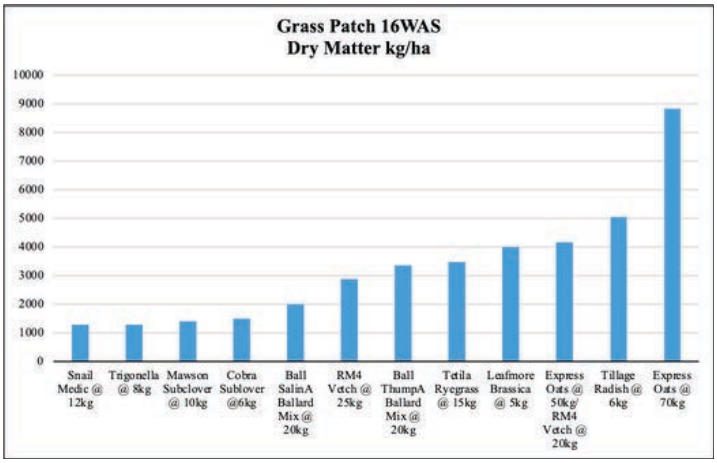
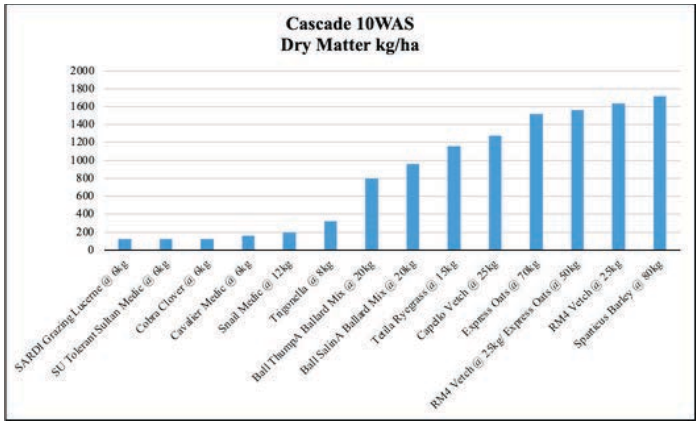
Dry Matter Results

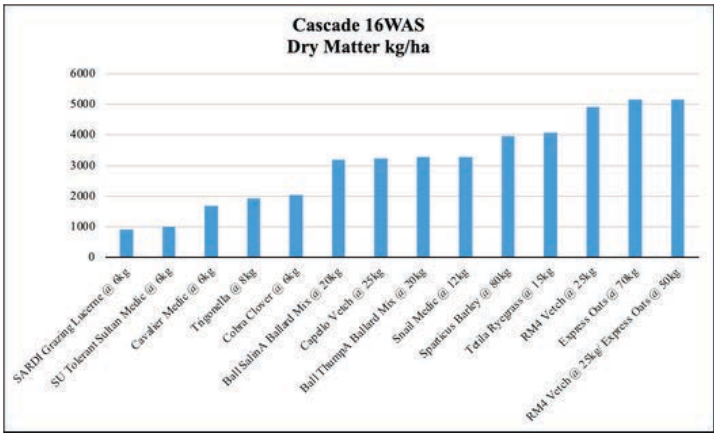




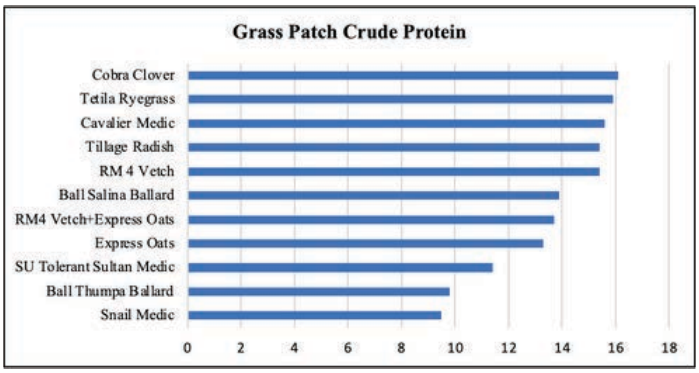


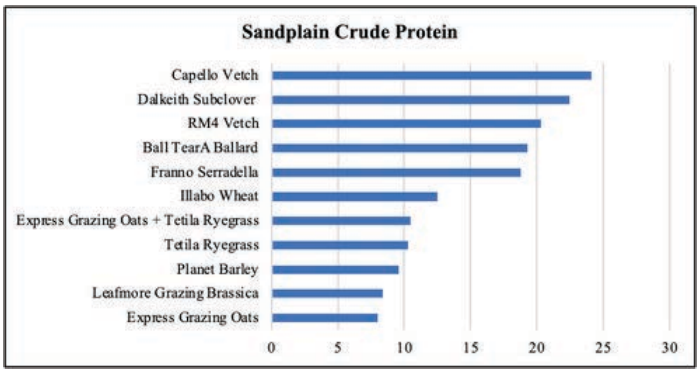






CSIRO NV Analysis Results





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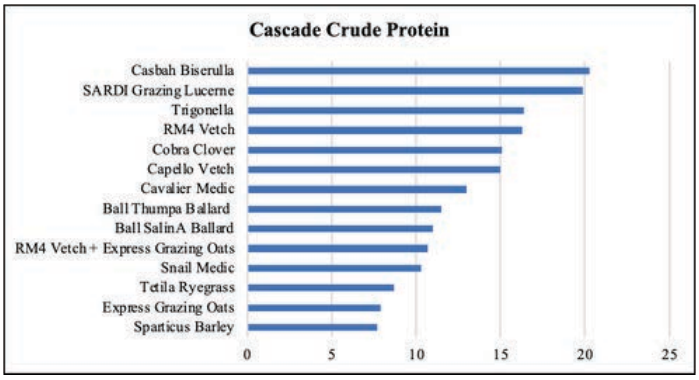

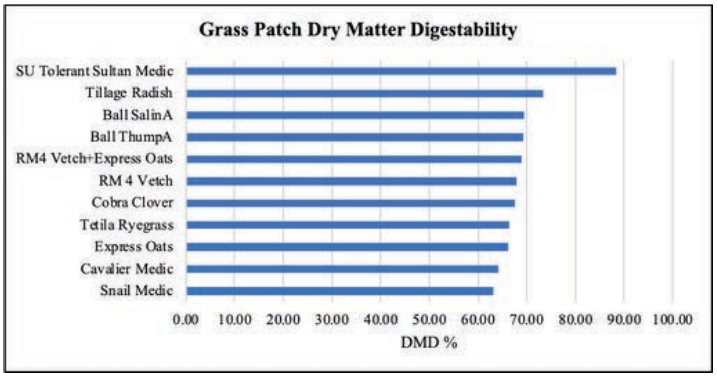

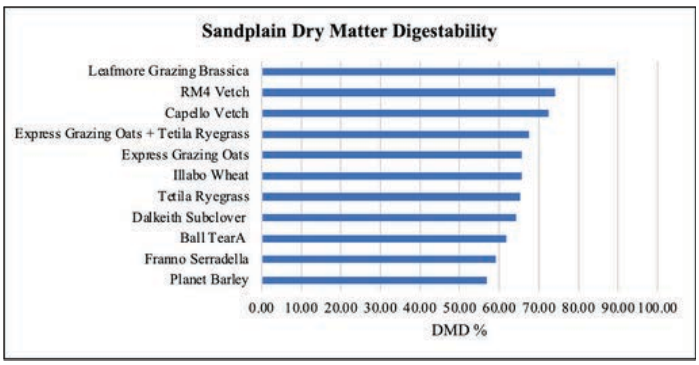

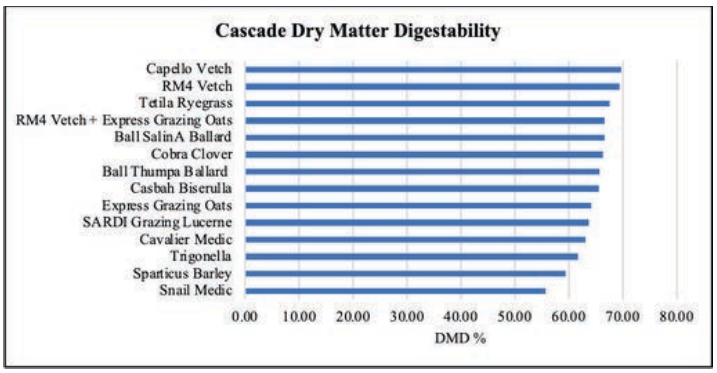

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Text Sarah Brown on 0409 335 194 or email eo@asheep.org.au to be added to the group.

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Dryland Pasture Legume System Project - Variety Updates

A few key notes from Rob Harrison, CSIRO on the new varieties emerging out of the Dryland Legume Pasture Systems Project.

New bladder clover

- Potentially available to licenced growers in two years
- Flowers 10 days earlier than cv. Bartolo
- Successfully outcompeted Bartolo in Mingenew, Scaddan and Narembeen areas in terms of seed yield and biomass
- High hard seed content for better persistence
- High Nutritive value especially as senescence
- Small seed to avoid ruminant digestion
- Header harvestable- no suction harvester needed

Trigonella

- If passes the meat taint test will be potentially available in three years (pending red tape)
- 76 Days to flowering
- Header harvestable- no suction harvester needed
- Applicable to summer sowing with unique hard seed breakdown
- Compliments background medic pastures
- Small seed to avoid ruminant digestion
- Indeterminate growth habit

Frano

- Early French serradella (14 days earlier than Margurita)
- Available to producers now
- Header harvestable- no suction harvester needed
- Applicable to summer sowing with unique hard seed breakdown
- Early vigour (seed 25% bigger than Margurita)
- Indeterminate growth habit