



Keys To Pasture Establishment



Establishing a pasture is possibly the most frustrating but rewarding project that any person could undertake. On one side of the coin, it is frustrating in the fact that we are sowing expensive seed onto the ground in the hope of getting a suitable season for pasture establishment, and then when it does rain, the unpredictability of the seed causes even greater problems. However all the problems aside, the image of a picture perfect paddock with fat bullocks or cows with big sappy weaners hanging off them is often the driving force in continued pasture improvement.

Seed Quality

One of the first steps necessary is securing seed that has reasonably high purity as well as high germination. In years gone by, over-the-fence sales have been popular with producers. However only Tetrazolium tests are taken, which only provide an indication of the percentage of viable seed, which includes low vigour seed, abnormal seed and light seed. While this is suitable for a quick gauge, a full germination test is essential to gain a full picture of the seeds' capabilities. Seed purity is also essential to make sure that you are not purchasing someone's weeds. It only takes a small number of weed seeds to cause an economic impact on your enterprise. There used to be standards which tropical pasture seed had to meet to be acceptable for sale. However this has fallen by the wayside and the responsibility is on the customer to ask for seed analysis results when making a decision to buy seed.

When buying coated or pelleted seed it is critical to examine the number of pure live seeds/kg, as this will provide you with the essential information to calculate your planting rate. The table below outlines the advantages of using ENVIROGRO™ over other coated seed products. The information used came from a line of buffel seed processed in season 2006.



A young Cardillo Centro seedling direct drilled into Signal Grass pastures. Some management is required to stop the seedling being smothered out.

Field Establishment

Minimizing field losses during the establishment will ultimately lead to a successful result when planting improved pastures. Because of the nature of the seed there is often a whole host of causes that can lead to reduced field establishment. These factors can include:-

1. *Seed being sown too deep.* Grasses and small seeded legumes can only be sown at a maximum depth of 10 –15mm.
2. *Surface sealing after heavy rain.* The germinating seedlings will struggle to push through a dry crusted surface and therefore die.
3. *No ground cover present.* Ground cover is essential to slow down moisture runoff, and to cool the soil surface for the germinating seedling. Soil temperatures can reach 60°C plus in the peak of summer. Good groundcover can often make up for poor seed soil contact.
4. *No available moisture for establishing seedling.* Some soil stored moisture is essential for the plant to access once it has germinated, otherwise seedling death will occur.
5. *Increased competition from other species and weeds.* Seedling will struggle to be able to compete for moisture, nutrients and sunlight, especially if they are competing with established plants or weeds. Legume seedlings will struggle to compete with establishing grasses if nitrogen fertilizer has been applied.
6. *Inbuilt seed characteristics.* Seed dormancy and seed hardness are often two factors that cause great heartache when establishing pastures. The unpredictability means that even if perfect seed establishing rainfall does occur, the seed will not germinate until it sees fit. Whilst we can manipulate this as much as possible using laboratory test results, quite often the influence in the field is not reflected.
7. *Seed loss through insects.* Seed harvesting ants are the biggest culprits for seed losses in the field. While seed can be treated with insecticide, the ants will still eat the seed before dying. Adjusting your planting time to minimize the time the seed is exposed prior to planting is often the best method, and commercially available deterrent treated seed will soon be available.

Coated Buffel Seed

- Starting Bare Seed Line:-
 - Purity—98.5%
 - Germination—58%
- Coated Seed Line:-
 - Purity—98.5%
 - Germination—58%
 - Seed Count/kg—Approx. 100,000
 - Approx \$ - \$7.00/kg
 - Live Seeds/kg - 57,130 seeds/kg
 - \$/kg Live Seed- \$12.25/kg

ENVIROGRO™ Buffel Seed

- Starting Bare Seed Line:-
 - Purity—98.5%
 - Germination—58%
- Coated Seed Line:-
 - Purity—99.9%
 - Germination—85%
 - Seed Count/kg—Approx. 100,000
 - Approx \$ - \$10.00/kg
 - Live Seeds/kg - 84,915 seeds/kg
 - \$/kg Live Seed- \$11.77/kg

From the figures, it can be seen, that when starting with the same line of bare seed, the ENVIROGRO™ process improves purity and germination, and as such whilst seed counts/kg may be the same, the actual total number of live seed is nearly 1.5 times as many in the ENVIROGRO™ Buffel seed than the Coated Seed.

Methods of Sowing

- Blade Plough or Cutter bar. Controlling sowing depth is difficult and the best time for ploughing is generally not suitable for seeding.
- Fertiliser Spreader. This is an effective means for seeding old cultivation that has had excellent seed bed preparation.
- Air Seeders & Combines. This is a highly desirable method for flowable seed as seed placement and sowing rate control is accurate.
- Crocodile Seeders and Pasture Renovators. Suitable for introducing grasses and legumes into naturalized or old improved pasture systems.
- Aerial Seeding. Perfect for covering large areas very quickly. Effective in sowing timbered country as well as country that has previously been blade ploughed or cutter barred.



Management After Establishment

- It is critical in the first few months after planting that no animals are allowed to graze the paddock, until the plants have been able to seed and develop a strong root system. Allowing the plants to go to seed will ensure the pasture will thicken up and that there will be seed to germinate in years to come.
- Management of weeds is critical during the early stages. As most pasture species are perennials they are often slower than weeds in establishing. Weeds can be controlled by either herbicide or slashing. Consideration is required if legumes are incorporated with the pasture, as herbicide options are reduced.
- If there is a mixture of species within the pasture, strict grazing management is required to ensure that no species are over grazed or in fact under grazed. Knowing when different species are at their most acceptable is an essential requirement for maintaining the integrity of the stand.