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Program

- History of the Tropical Seed Industry
- Tropical Seed Physiology
- ENVIROGRO®
- Main Cultivar Options
- Open Discussion

History Of Tropical Seed Industry

- In Australia & primarily in Queensland, the Tropical Seed Industry started out in 1960's
- Considerable investment in the early days to cultivar selection via QDPI.
 - Many of the cultivars marketed today have been around for 20 – 40 years.

History Of Tropical Seed Industry

- Early cultivars were all produced under a Seed Certification Program
 - Until it was discovered that there was too much genetic variability within the cultivars to police this.
- As a result, there have not been many PBR varieties released since the late 90's.

History Of Tropical Seed Industry

- Long history of variable seed quality
 - Purity, Germination, Seed Dormancy (Hard & Fresh Seed)
 - Extremely difficult to remove weed seeds, particularly from chaffy grasses
 - Over the fence sales based only on a TZ

History Of Tropical Seed Industry

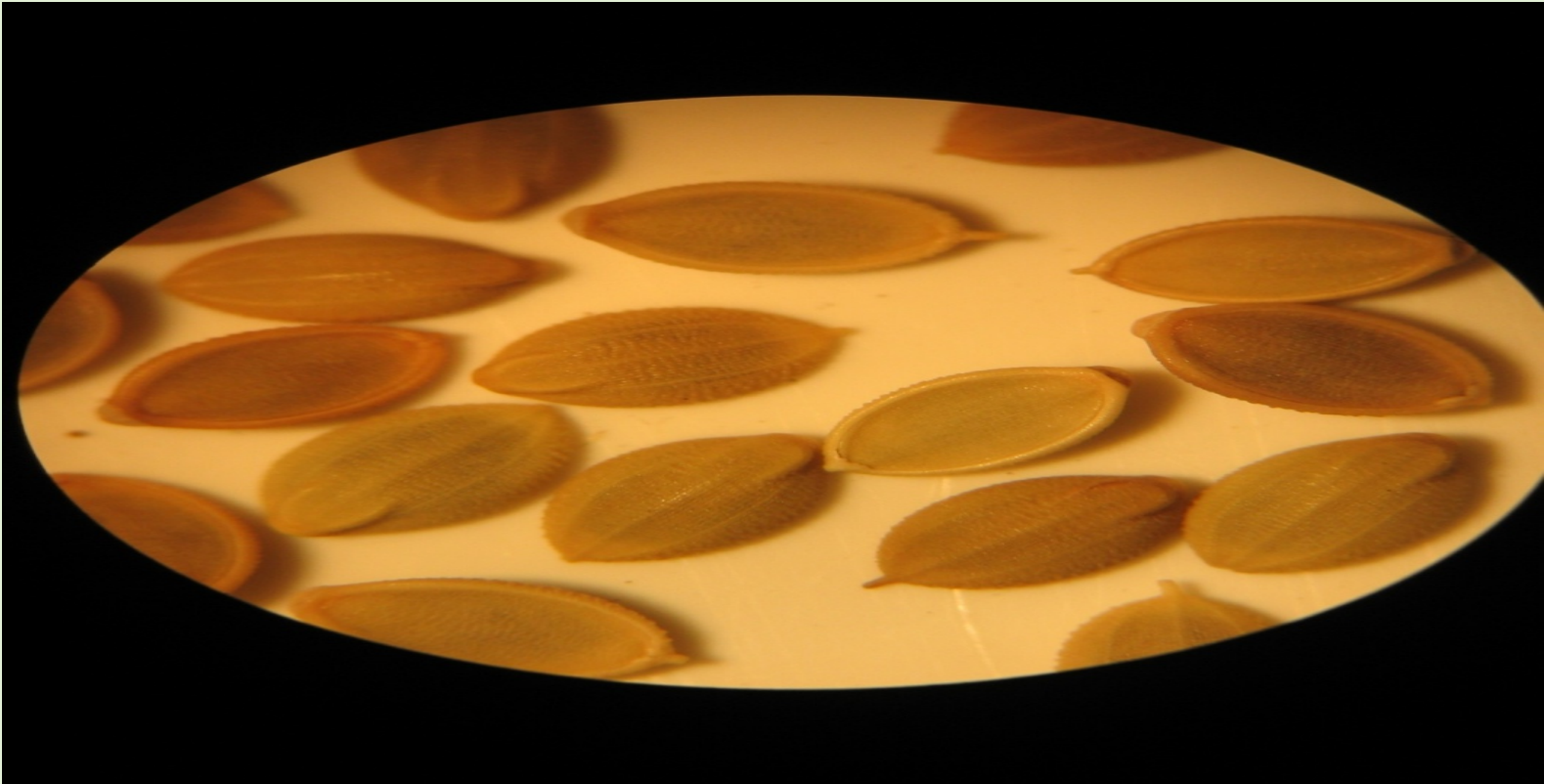
- Seed Standards for Tropical Seed no longer exist.
 - The old Seed Standards were very low in comparison to Temperate & Cereal Seed.
 - Panic – Min. Purity 70% / Min. Germ 20%
 - Katambora Rhodes – Min. Purity 85% / Min Germ 20%

History Of Tropical Seed Industry

- Outer seed coat restrictive of accurate sowing techniques
- Limited understanding of plant density requirements
 - Original sowing rates were developed on producing a productive pasture after 18 months.

History Of Tropical Seed Industry

- The early years of “coated” tropical seed
 - Excessive build up’s
 - Recommended seeding rates were not altered to allow up for the build up’s.
 - Weed seed and chaff included in coat
 - The end result was pasture’s that were not meeting the end users expectations.



To Sow The Seed, You Need To Understand The Seed

TROPICAL SEED PHYSIOLOGY

Tropical Seed Physiology

- Most tropical grasses & legumes contain dormant seed in the form of fresh or hard seed
- Understanding the principals of this, allows you to greater understand the variability's in results.



What is it?



What is ENVIROGRO®?

- **ENVIROGRO®** is unlike any other pasture seed treatment in Australia.
- **ENVIROGRO®** is a fully patented seed treatment to agronomically deliver a consistent quality tropical pasture seed.

What is ENVIROGRO[®]?

- **ENVIROGRO[®]** is based on the principal of pelleting caryopses (seed kernel) of grass and legume species.
- **ENVIROGRO[®]** allows for more precision & predictability during sowing and establishment of Sub Tropical and Tropical pasture seeds.
- Less weed seeds, Known live seed counts

What is ENVIROGRO[®]?

- Difficult to handle
- Very Bulky
- Seed dormancy can be unpredictable
- Difficult to remove weed seeds
- Difficult to plant accurately

Bare Seeds



What is ENVIROGRO®?

- Extremely High Purity
- Increased Germination
- Reduced dormancy
- Very fragile
- Removal of Light / Immature Seed
- Known No. Caryopses / Kg

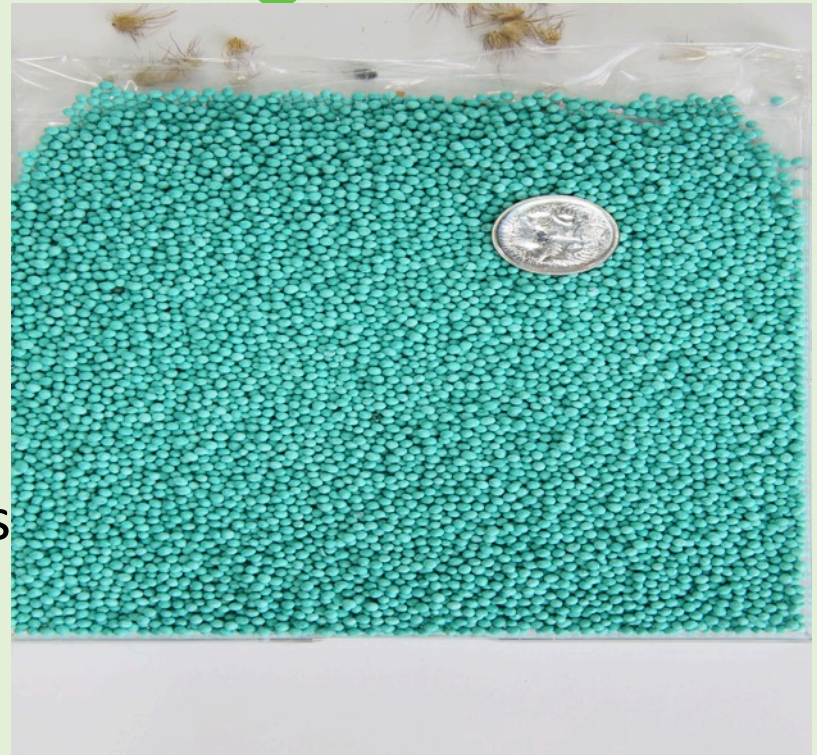
Seed Caryopses



What is ENVIROGRO[®]?

- Uniform seed size
- Known live seed count /kg
- Easy to calibrate seeding equipment
- High flow characteristics
- Retains the high seed quality characteristics of the caryopses

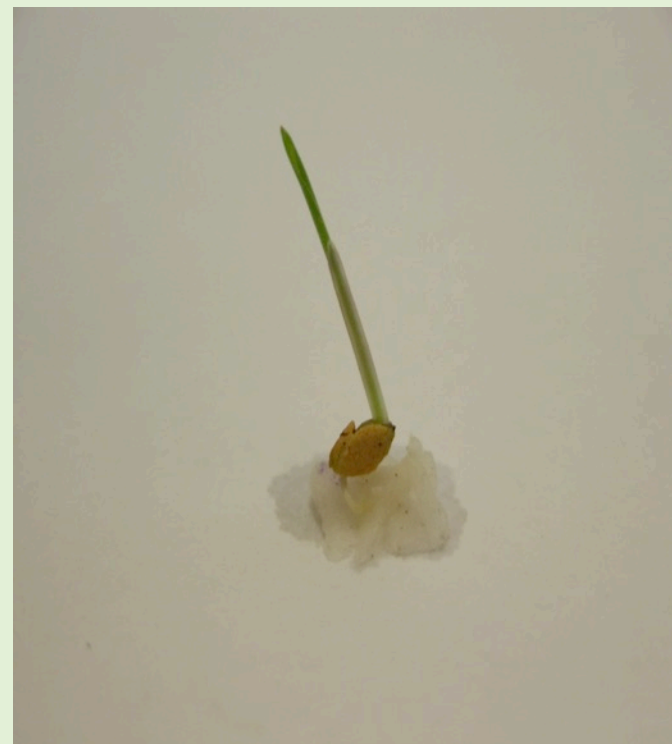
Envirogro Treated



What is ENVIROGRO®?

What makes up the pellet?

- Caryopses
- Talc
- Polymer
- Trace element nutrients
- Gaucho® Seed Treatment



What is ENVIROGRO®?

- Quality control is pivotal throughout the whole process.
- Seed is certified by an ISTA laboratory no less than three times.
- ENVIROGRO® seed certificate incorporates, Purity, Germination, Verification of Species (Caryopsis /100 pellets) & Live Seed Count/kg

V8 Stylo

- Strict tropical legume
- Grows on sandy through light clay soil types
- Performs well planted by itself or in mixed grass pastures
- Excellent in tropical crop rotations
- Palatable and accepted by grazing animals
- Suitable for hay and silage production
- 2,4-D Tolerant aid in weed control
- Has shown tolerance to Anthracnose



Caatinga Stylo

- Mixture Unica and Primar Stylo's
- Grows on wide range soil types
- Slow to establish, may require planting prior to grass seed
- Shows good drought tolerance
- Palatable and accepted by grazing animals
- Can withstand heavy stocking once established
- Good resistance to Anthracnose



Mekong Briz™ antha

- True tropical grass species
- Grows on wide range soil types
- Tolerant to periods of waterlogging
- Tufted species increasing over time
- Aggressive grass that requires grazing management
- Suitable for mixing with tropical grasses and legumes
- Suitable for intensive grazing systems



Gatton Panic

- Highly Palatable Tropical Grass
- Requires more N fertility than most of the other Tropical Grasses
- Grows on a wide range of soil types
- Responds quickly to light rainfall events
- Responds quicker than Rhodes Grass coming out of winter
- Combines extremely well with lucerne in a dual species pasture mix



Bambatsi Panic

- Suited to high fertility cracking clay soils
- Tolerate to flooding
- Some tolerance to saline conditions
- Good drought tolerance
- Has been known for poor 1st year establishment due to dormancy
- Peak growth period is during later summer
- Requires lower N fertility when compared with Gatton Panic



Premier Digitaria

- Very persistent, productive and drought-tolerant species
- Well adapted to light-textured soils and red loam soils
- Often these soils are characterized with low pH and medium to high of exchangeable Aluminum
- Grows longer into autumn and up to 3 weeks earlier in spring than most Sub Tropical grasses
- Will scavenge for water as much as Katambora



Purple Pigeon

- Best suited to fertile, heavy black cracking clay soils
- Known for its excellent 1st year production
- Not as persistent as Bambatsi
- Has some tolerance to flooding
- Best sown as a single grass species stand
- Best suited to rotational grazing systems



Buffel Grass

- Very Drought Resistant
- Responds quickly to small rainfall events
- Main varieties Gayndah & USA grows best on lighter textured soils
- Does require reasonable fertility (P>10 mg / kg & total N > 0.1%)



Main Cultivar Options

- Tropical grasses have different strengths and weakness, grazing management will determine the real success of a tropical pasture
- Caution require recommending mixes due to difference in palatability and management required

Determining Plant Population

- Several Factors Need Consideration:-
 - Moisture Holding Capacity Of The Soil
 - Average annual rainfall
 - Requirement of legume introduction
 - Production expectation
 - Potential population of undesirable plant species

Determining Plant Population

- Rule of thumb is for a PURE grass pasture, budget on establishing 8 – 16 plants / m².
- Research suggests that more plants does not necessarily result in more DM/ha.
 - However you do have the potential for greater weed suppression at higher populations

Determining Plant Population

1 Digit Plant / m²



4 Digit Plants / m²



Determining Plant Population

9 Digit Plants / m²



16 Digit Plants / m²



Determining Plant Population

- Field Establishment depends on soil texture and sowing technique
 - Under zero tillage practices, budget on 8% (heavy clay)-15%(sandy-loam) Field Establishment.
 - Compared with aerial seeding onto undisturbed soil can be 1-5% (depending on soil texture)

Wrap Up

- Tropical pasture have a large role to play in Northern Australia
- ENVIROGRO[®] overcomes many of the issues with Tropical pasture seed
- Select no. of cultivars suited
- Plant Population can play a critical role to the sustainability of the system

Wrap Up

- Seedlings relatively easy to distinguish
- Wide range of weed control options
- Good grazing management can be profitable
- Understanding animal nutrition can increase returns
- Soil fertility needs to be managed for long term production

- QUESTIONS
- THANK YOU FOR YOU ATTENTION