Producing high quality cotton planting seed: the Australian Perspective.
ICAC
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Disclaimer

For Information Only

Results may vary, and are not guaranteed by CSD

Individuals assume all responsibility for their use of the information presented.
Overview

- Cotton Seed Distributors Ltd.
- Seed production
- Seed processing
- Seed Testing
- Seed storage
Cotton Seed Distributors Ltd

- Company limited by guarantee
- Founded in 1967 by cotton growers
- Members not shareholders
- Owned by Industry and controlled by members
- Members principally Australian Cotton Growers and Industry Personnel

For more information visit www.csd.net.au
Cotton Breeding Australia (CBA)

- CSD and CSIRO have been working together since 1971, with over 100 cotton varieties released to the Australian market.
- This partnership was formalised in 2007, through the formation of the Cotton Breeding Australia (CBA) joint venture.
- CBA is a targeted research fund set up to facilitate the research and development of future cotton varieties for Australian growers.
Cotton Varieties

- CSD has the global marketing rights for CSIRO cotton germplasm.
- Currently over 99% of cotton varieties sold in Australia are GMO, with the majority containing the B3F traits under License from Bayer.
- Bayer has the exclusive world-wide rights to market the current CSIRO cotton germplasm outside of Australia.
CSD Seed Increase

- All seed crops are grown to Internationally accepted OECD Seed Scheme standards
- Crop inspection results are audited annually by a third party Certification Agency
- All crops are grown under a Limited Generation Seed Scheme (Breeders > Pre-Basic > Basic > 1st Gen > 2nd Gen)

- Effectiveness of QA monitored by Post Control program
Early Generation Seed Increase

- All Early Generation Seed Increase crops are grown under strict control on CSD Farms
- Seed Increase may include Regulated (OGTR) and Stewardated (Bayer) material
Seed Increase – In crop

- Seed crops are grown under contract
- Potential growers submit an Expression of Interest to grow
- Proposed fields are inspected prior to selection
- All cultural operations require equipment to be inspected prior to operation
- Planters and seed source verified prior to sowing
- Crops are inspected at least four times during the season for off-types, weeds, disease and general condition
- GMO crops are leaf sampled and presence of trait/s verified
- Picker/s and all handling equipment are inspected prior to picking
Seed Crops - Harvest

- Every round bale/module is sampled after picking
- Samples are tested for:
  - Germination
  - Mechanical Damage
  - Moisture content
  - Transgenic purity
- Round bales/modules cannot be moved until testing is complete, and/or approved by CSD
- Pure seed is segregated in the gin yard
Monitoring Moisture Content – (Vomax)

- It is critical to monitor and manage moisture content
- No picking is allowed if seed crop moisture content is above 10%
- Vomax unit commissioned in 2015/16 (40,000+ round bales have been assessed over the last four years)
Seed Receivals

- Seed Receivals tested for
  - Cutting Test
  - Free Fatty Acid
  - Moisture content
  - Residual Lint Percentage
  - Germination (warm/cool)
  - Transgenic Purity
  - Mechanical Damage
  - Seed Recovery
Seed Processing

- Fuzzy seed is delinted in high capacity (200t fuzzy/day -150t black) HCl gas delinting plant.
- Delinted seed is screen cleaned and gravity graded before bagging.
- Treating capacity is approx. 400t/day)
Seed Testing

- Seed tested to Internationally accepted test methods (CSD tests are based on ISTA test methods)
- Main germination tests are cyclic 30/20°C and constant 18°C
Quality Assessments

• Seed quality is assessed throughout the multiplication process:
  • Modules
  • Loads
  • Sheds (seed storage)
  • Intermediate Product,
  • Finished Goods
  • Carryover Seed
Quality Assessments

- Over 50 assessments are taken for each seed lot, plus a further 16 tests, which are taken from the field to the final point of sale – including:
  - testing for trait purity
  - germination potential
  - fungicide and insecticide seed treatment quality
  - long term storage potential.
Seed Release

- All seed produced needs to meet various contractual standards
- For example:
  - Trait provider – gene purity, adventitious presence
  - Regulatory – OGTR, Stewedared Conditions,
  - Truth in Labelling,
  - Minimum standards
Seed Storage

- Temperature plays an important role in storage of seed.
- Insects and moulds increase as temperature increases.
- The higher the moisture content of the seeds, the more they are adversely affected by temperature.
- Decreasing temperature and seed moisture is an effective means of maintaining seed quality in storage.
Harrington rules of thumb on seed storage

- The arithmetic sum of temperature in °F and percent relative humidity (RH) should not exceed 100, with not more than half contributed by temperature.
Thank you.