

IITA

Transforming African Agriculture



CGIAR



Genetic Gains: perspectives from industry

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Enhancing and measuring Genetic Gain in crop breeding – private sector perspective

- **Genetic Gain** = Yield Potential + Defensive Traits + Input Traits + Output Traits + Other Agronomic Traits - **Cryptic Factors effects**
 - Input Traits – include traits that enable high level management
 - Defensive Traits - abiotic & biotic stress resistance
 - Output Traits – quality traits, nutrition traits etc.
 - Agronomic Traits – secondary traits, e.g. maturity dates
 - Cryptic Factors - random uncontrolled effects, side effects or crop damage encountered during management operations

Genetic gain reflects highly on maximising grower value as the major goal

Potential yield reflects high end of the yield scale

- **Attained when**

- Best adapted variety (usually the most recent release) is grown
- Best agronomic management is applied
- Manageable abiotic and biotic stress is minimised
- Grown under the same natural resource base and cropping system as the target region of production

- **Implications**

- Benchmarking – top 4 varieties for the market segment & newest best
- Meet minimum thresholds for elements of the GG equation
- Continuous improvement
- Varietal turnover by farmers & policy
- Genetic gain is tested on-farm in the target market segment