

INTtrait™

Molecular Breeding Technology

Plants for Future Generations



Classical
Breeding

INTtrait™

**INTtrait™ enhances
plant genetic diversity**

Genetic
Modification

Genome
Editing

Multiple paths to develop seeds



INTtrait™ confers new traits by recombining existing genetic elements of ≥ 20 nt of the crop genome

- Existing plant genetic elements are identified in-silico and are synthesized to create a new trait locus
- The new trait locus is inserted into the crop genome using direct delivery systems
- Plants expressing the new trait locus are selected based on trait performance

The science behind INTtrait™

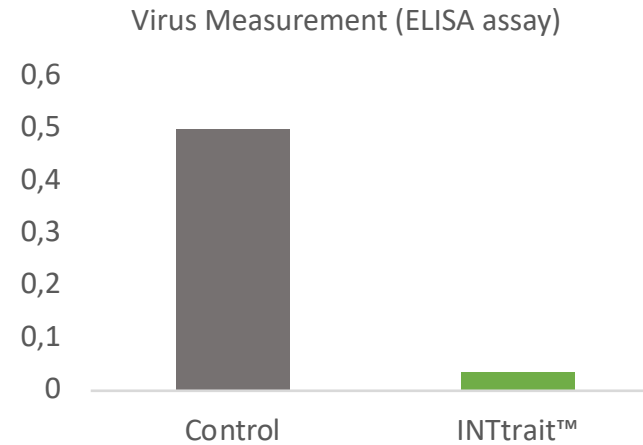




Control



INTtrait™



Tomato genetic elements were recombined to form a novel miRNA to directly target and silence the viral RNA genome

Trait Performance is heritable in subsequent generations

INTtrait™ Virus Resistant Tomato





Biotic Resistance Traits

Virus Resistant **Tomato**

Virus Resistant **Sorghum**



Abiotic Resistance Traits

Salt Tolerant **Rice**



Quality Traits

High Anthocyanin **Tomato**

Fragrant **Rice**

INTtrait™ Other Examples



	Genome Editing	INTtrait™
Expression of Plant Gene	☆	☆☆☆
Mutation of Plant Gene	☆☆☆	
Silencing of Target Gene(s)		☆☆☆
Novel Trait	☆	☆☆☆

INTtrait™ and other genome editing technologies like CRISPR systems are complementary and both offer advantages over previous methods to develop traits by molecular breeding

INTtrait™ or Genome Editing ?



With INTtrait™,

- Explore the potential of plant genetic diversity
- Unravel novel modes of action
- Develop traits for more resilient crops
- Develop traits for healthy food products
- Develop novel plant products across industry sectors

Like for genome editing technologies, the Regulatory Path was confirmed for the US market by USDA - APHIS does not consider that the INTtrait™ products to be regulated under 7 CFR part 340

INTtrait™ broadens opportunities



- INTtrait™ is owned by Nexgen Plants and is protected by a Patent family across several countries - [WO/2017/185136](https://patents.google.com/patent/WO/2017/185136)
- Nexgen Plants is committed to grant access to INTtrait™ to scientists and breeders
- Nexgen Plants wants to promote partnerships and grants non exclusive research licence to academic partners

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Join the INTtrait™ Community

