

# Private sector approaches to variety design

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# Variety design approach

1. **Market definition** (country, sub/region, value, varieties)
2. **Profiling leading varieties** (quantitative trait assessment)
3. **Market research** to understand characteristics required to gain market share or create new value for:
  - farmers, processors, retailers/markets, consumers
  - seed producers and distributors
4. **New variety design** with performance bench-mark/standard to be achieved
5. **Technical feasibility** – trade-offs and breeding strategies
6. **Priority setting** of traits with performance measures for breeding
7. **Market research** to test assumptions throughout development and commercialisation

# Syngenta squash product profile

<b>Region</b>	<b>Europe/Middle East/Africa</b>
Market segment	Cylindrical squash (open field)
Market value	USD >20 million
Lead varieties	Otto, Carisma, Ezra, Clarita SL5

# Squash product profile - trait design

## 5 categories of traits

- Plant behaviour
- Pathogens – viruses and fungi
- Abiotic stress
- Harvest and storage
- Consumers

30 traits quantified  
vs. leading varieties

All traits ranked for priority

B = Basic and essential

1 = More market share

2 = New value as trait not available

# Product profile design - example

Trait Group	Trait	Trait description	Priority (B,1,2)	Required Performance	Benchmark variety
Harvest & storage	Blossom End Scar Size	Small			Otto
	Colour	Light green			Carisma
	Fruit Size (in cm)	16-18			Otto
	Fruit Shape	Cylindrical			Queen
	Fruit uniformity uniformity	High			Queen
	Early marketable yield	Good			Carisma
	Marketable Yield (tons/1000 m2)	Low waste during the weeks and high stable yield			Otto
	Easiness to pick (peduncle over 4 cm)	High			Clarita SL5
	Handling (skin) tolerance	Good			Carisma
	Consistency and post-harvest life	Good			Carisma

B = Basic and essential

1 = More market share

2 = Creates new value as trait not currently available

# Quantitative and qualitative trait comparisons



Arlika Alfibio Carisma Tulsa Iskander Otto

# Farmers



Trait performance  
benchmark

Easiness to pick

Peduncle over 4cm  
= Clarita SL5

# Retailors



Trait performance  
benchmark

Peduncle shelf-life >  
Queen



# Consumers



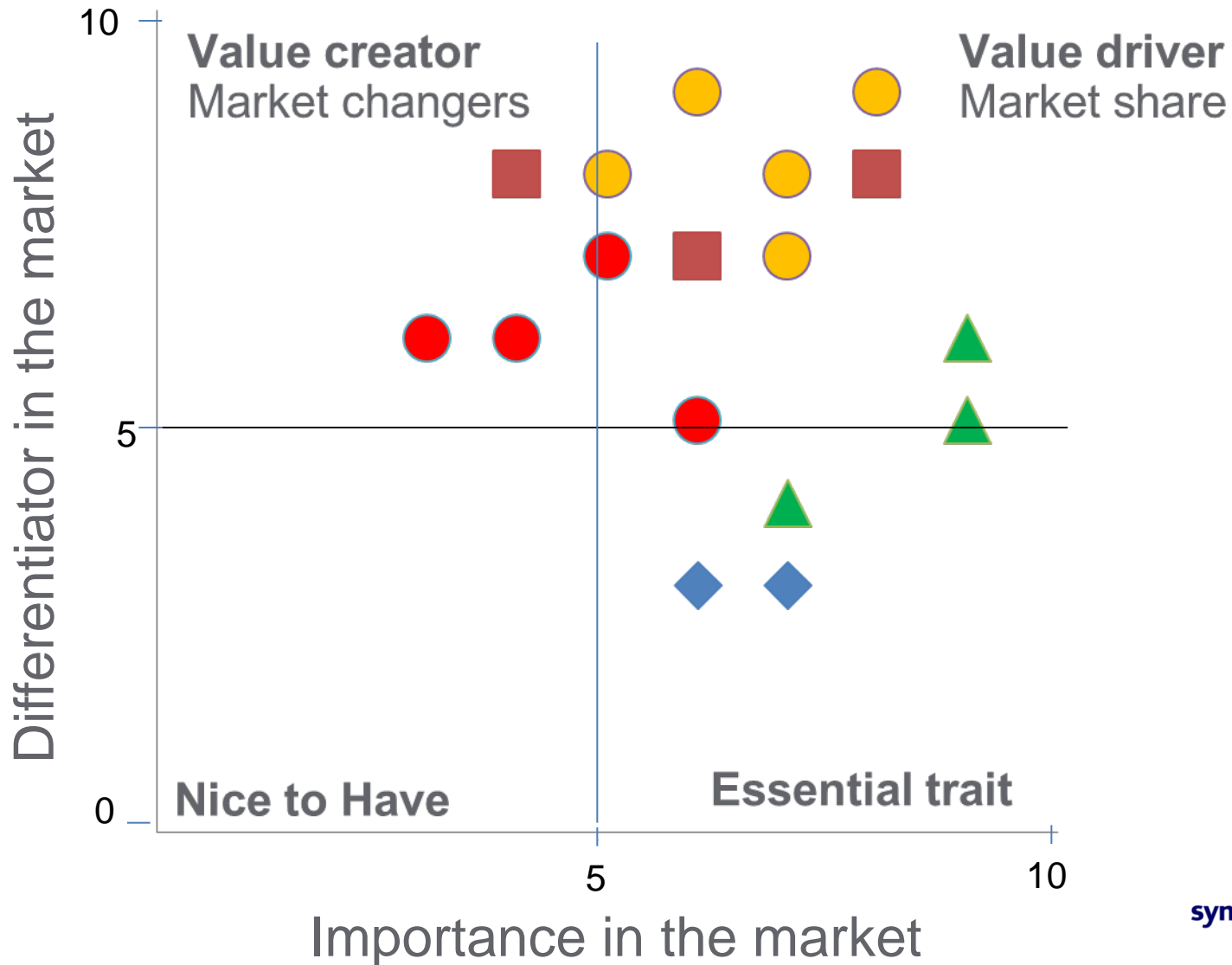
Trait performance  
benchmark

Fruit size  
16-18 cm = Otto

Glossiness = Otto

# Syngenta vegetable business

## Trait contribution



# Conclusions

- Highly systematic evaluation of market demands and customer preferences → adoption forecasts
- Ideal profile of characteristics of new variety designed
- Traits prioritised and matched cascade of testing
- Market research is key ....
- Close linkage between breeders and commercial/market colleagues
- Multi-functional team approach

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