




ESA

Minimum Distance
— perspective from Agricultural and Vegetable crops

Bert Scholte



Minimum Distance
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What are we breeding for?

Traits		Agriculture	Vegetables
Yield		+++	(+)
Resistance	Biotic stress	+	+
	A-biotic stress	+	+
Quality		+	+

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ESA Variety Listing and Protection

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Variety Listing

- VCU - Value for Cultivation and Use (Agricultural crops)
 - Traits: Yield, resistance, Quality
- DUS – Distinctness, Uniformity and Stability
 - Traits: Phenotypic

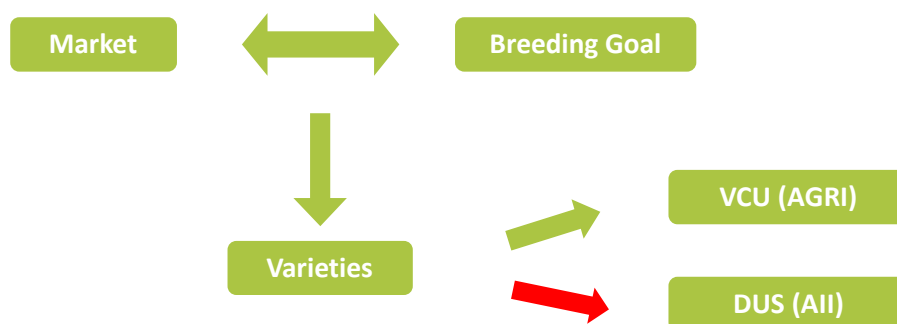
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ESA Market requirements, Breeding Goals and DUS

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DUS Characteristics – Minimum Distance – Oilseed rape

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	TG 36/6	Example
Seed	1	Presence / absence Erucic acid
Cotyledon	2	Length / Width
Leaf	7	Lobes
Flower	4	Length / Width
Pollen	1	Presence / absence
Plant	2	Height
Siliqua	3	Length of beak
Other	2	Vernalisation



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DUS Characteristics – Minimum Distance – Oilseed rape

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DUS Characteristics – Minimum Distance – Flax

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	TG 57/7	Example
Flower complex	13	Anther / Style color
Plant	1	Height
Boll	5	Ciliation false septa
Stem	2	Length cotyledon scar – 1 st branch
Seed	5	Length / Width ratio



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DUS Characteristics – Minimum Distance – Barley

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(29)	TG 19/10	Example
Plant	2	Growth habit
Leaf (ves)	5	Hairiness leaf sheath
Ear	9	Sterile spikelets
Awns	3	Pigmentation
Grain	9	Rachilla hair type
Type	1	Winter / Spring / Alternative



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ESA DUS Characteristics – Minimum Distance – Barley

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ESA Handling of reference varieties (CPVO)

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- Combination of
 - Morphological information
 - Molecular information
- Databases (Maize, Peach, Potato)

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ESA Conclusions

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UPOV Technical Guidelines - continuous need to improve

- Characteristics to find
 - Distinctness, Uniformity and Stability
 - Not necessarily linked to economic important traits
- Sufficient Discrimination power
- Only add Characteristic when needed
 - If needed for D – consequence for U/S and maintenance

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