



Creating an organic world together

Organic breeding at Vitalis started 25 years ago with two key players



We continue their initiative
and built further on the Vitalis R&D department





Why Organic Seed & Breeding?

- Organic integrity
- Regulated input
- Nutrient use efficiency
- Disease resistance
- Resistance to soil- and seed-borne diseases
- Plant architecture
- Early emergence (weed competition)
- Early maturing
- Unique genetic diversity requirements



Seed production



How organic breeding can
bridge to reach goals leading to
new resilient vegetable varieties

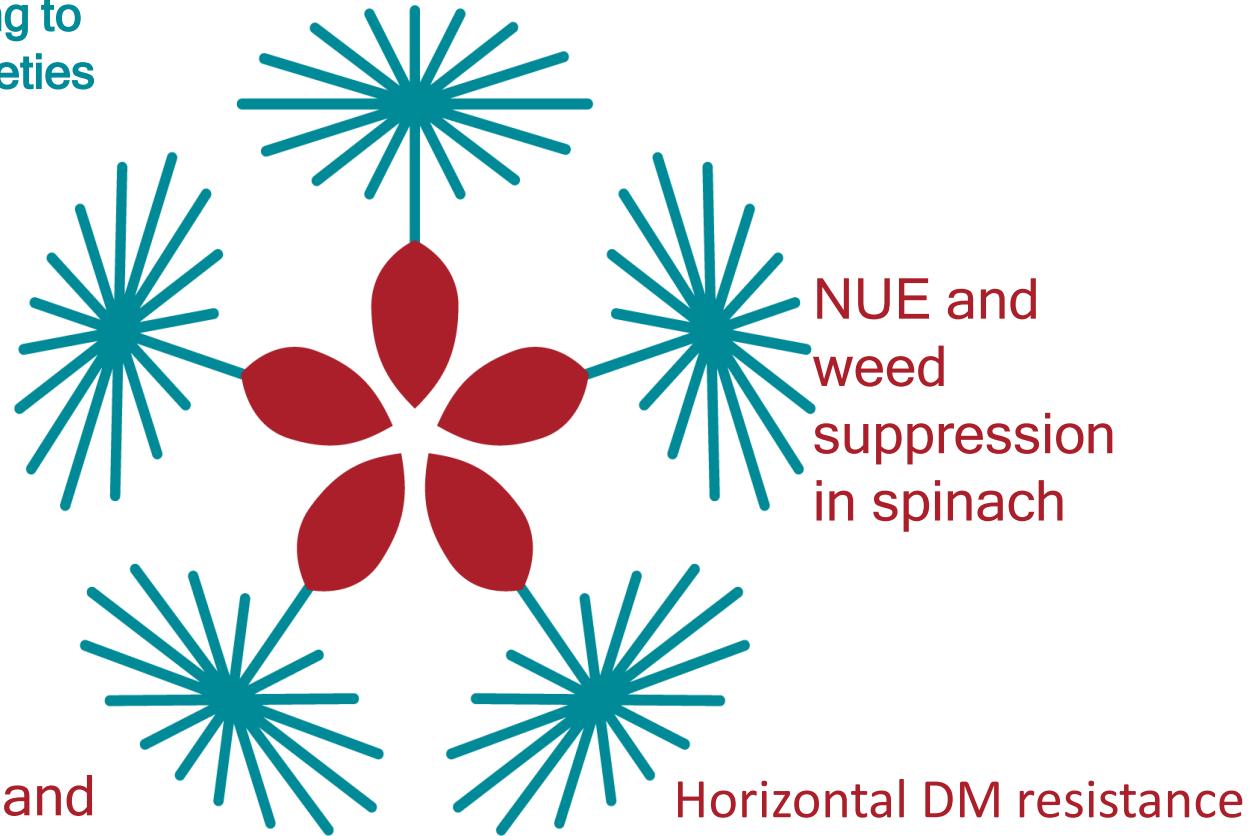
Taste, nutritional value and
yield in pumpkin

Bolting tolerance
and easy
harvesting in
endive

Aphid tolerance and
diversity in Pepper

NUE and
weed
suppression
in spinach

Horizontal DM resistance
and resilience in lettuce





We are Divers



We work on diversity



We depend on diversity

Breeding is all about Diversity



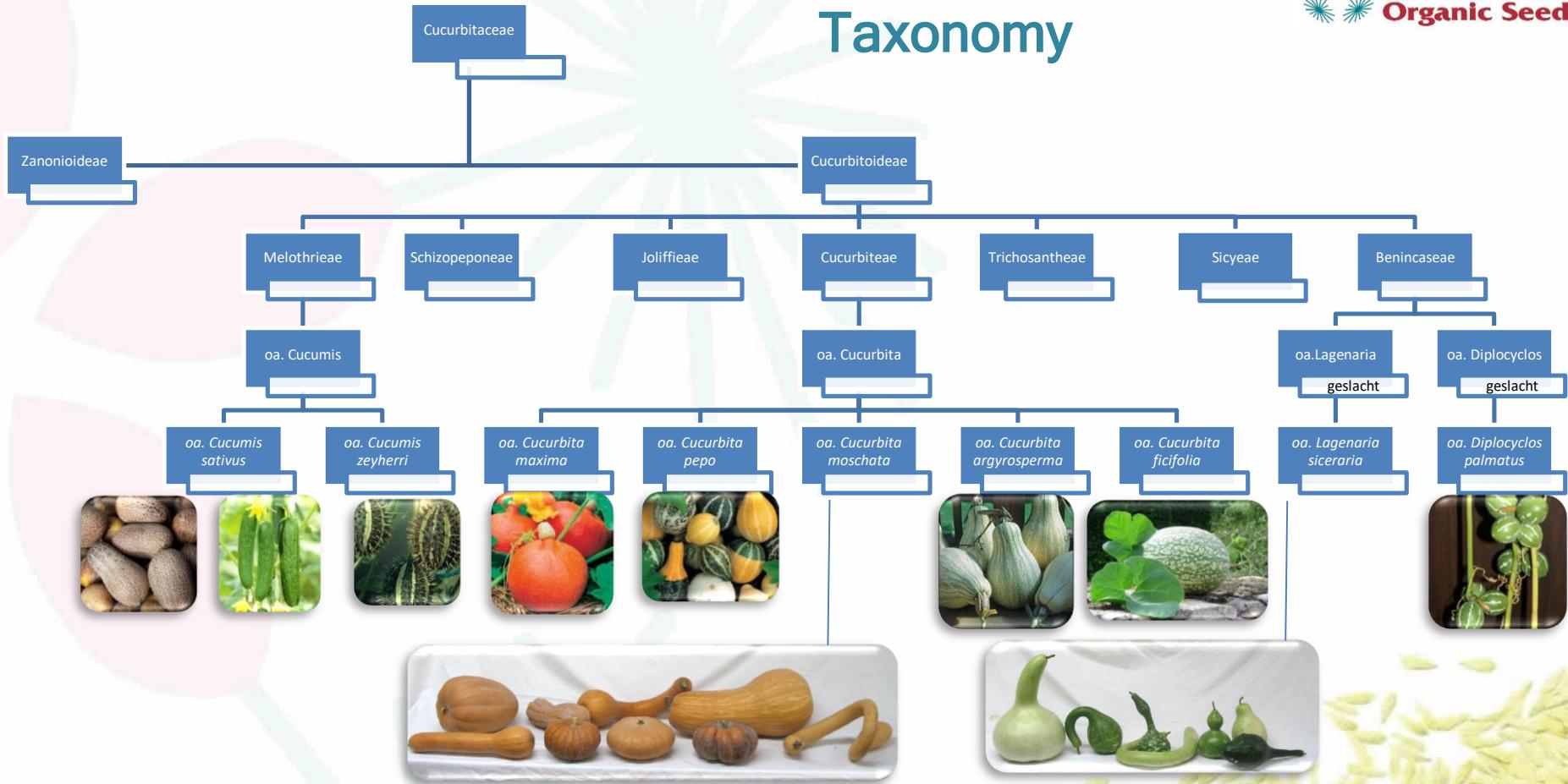
Vitalis organic breeding for the future



Divers seeds for thought

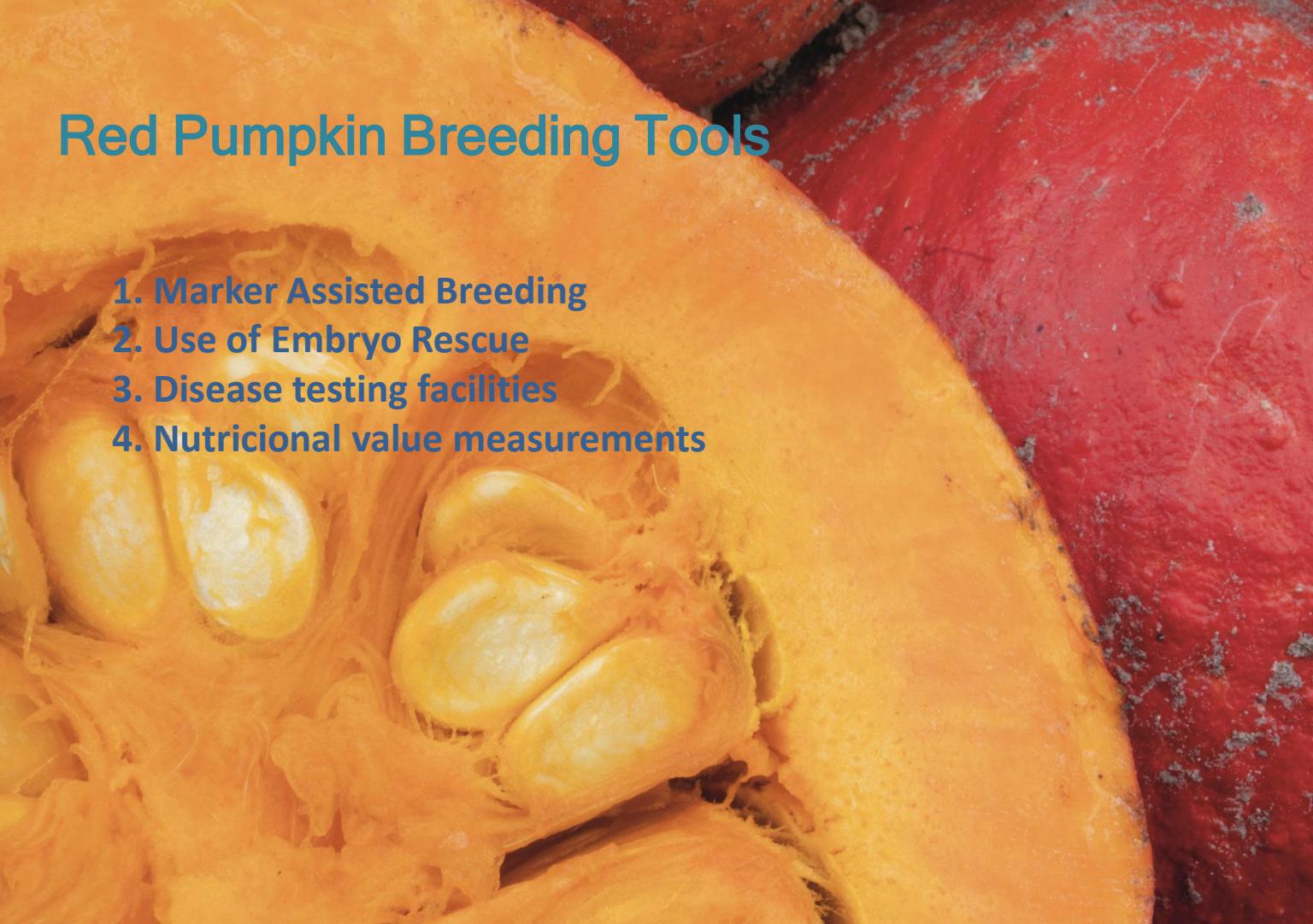


Cucurbitaceae Taxonomy



Red Pumpkin Breeding Tools

1. Marker Assisted Breeding
2. Use of Embryo Rescue
3. Disease testing facilities
4. Nutritional value measurements





Breeding forms the
Bridge from quality to
yield





Diversity in shapes and sizes



Diversity in threats



Breeding and demo fields at Vitalis September 2019



storage facilities

Priority of Traits

First

Has to be present at all times

- Production
- Taste

Second

Distinctive selection criteria

- Resistance
- Storage
- Plant type

Third

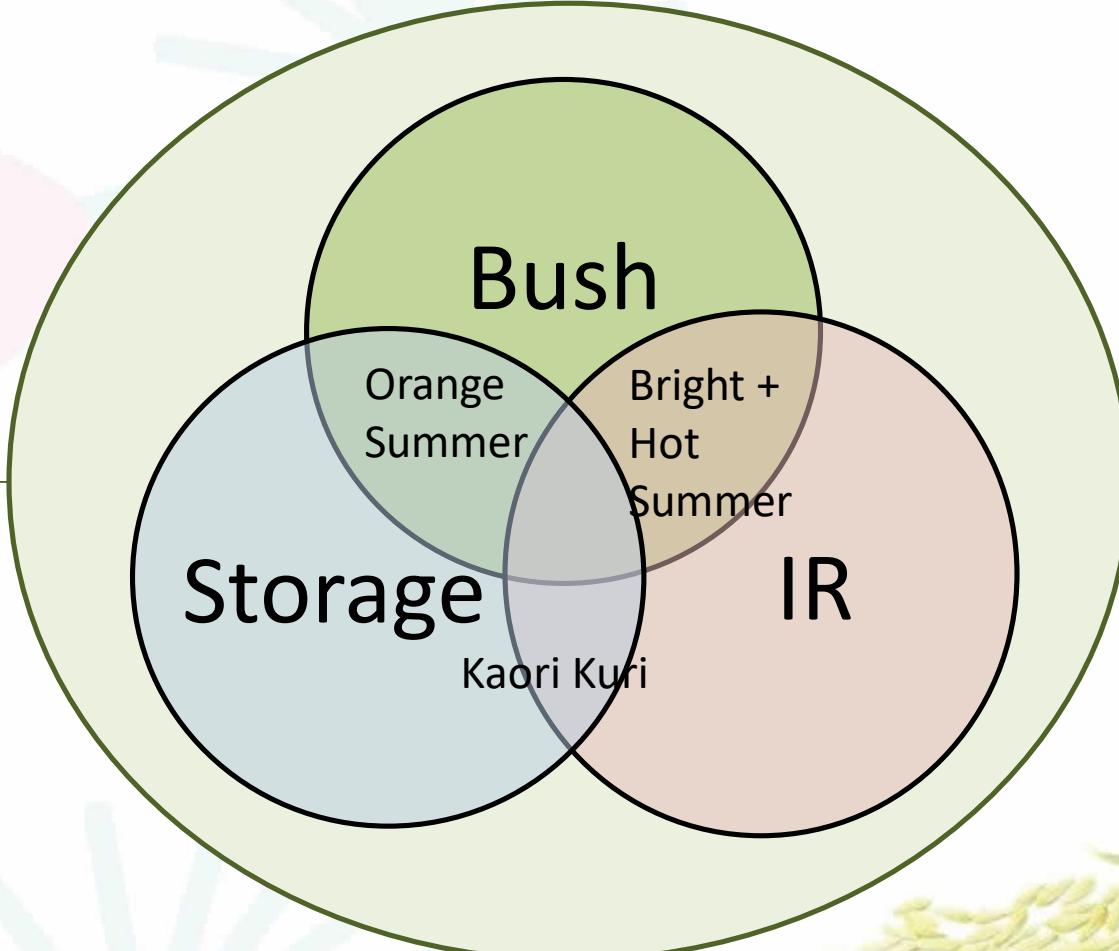
Important but not decisive

- Color
- Shape
- Vigour
- Earlyness

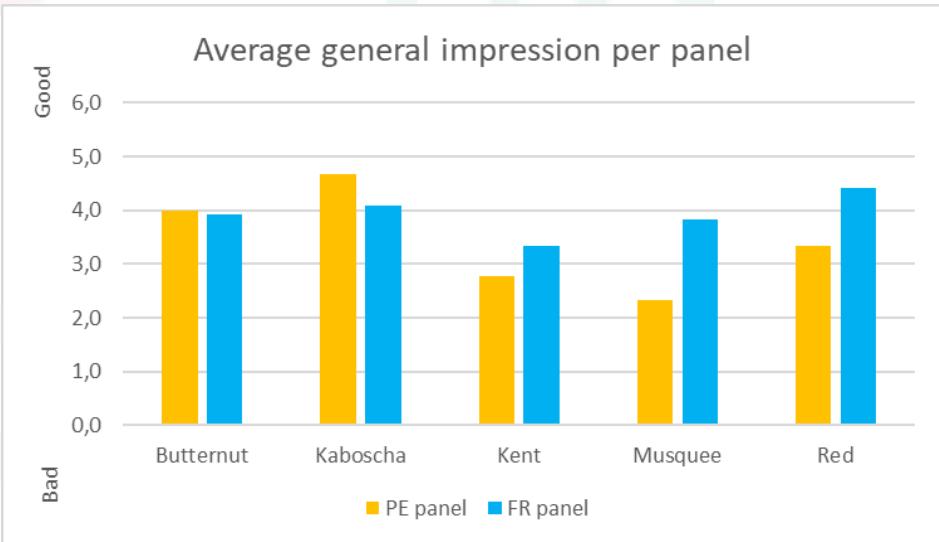
Segmentation of varieties

Production:
min. 25 t/ha

Taste:
min. brix 9%



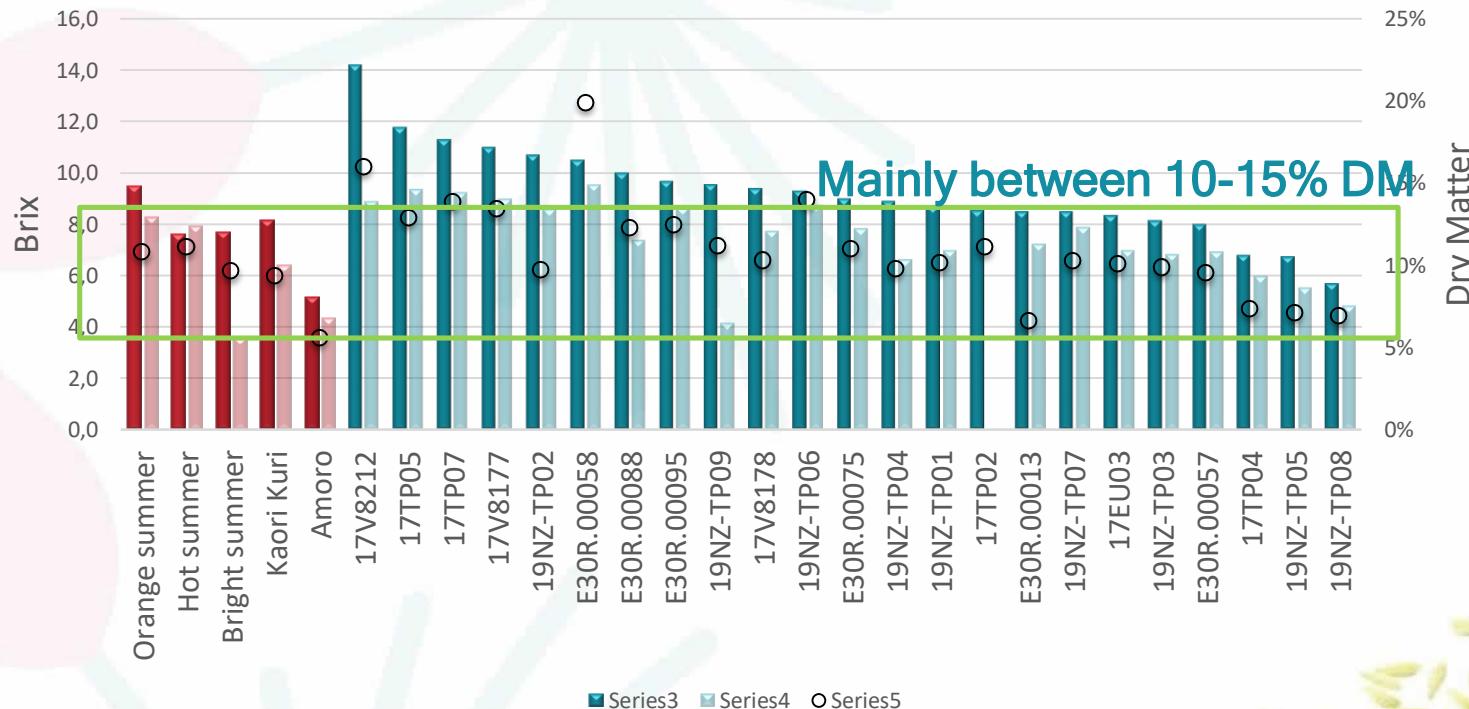
	Kabocha	Butternut	Red Kuri	Acorn	Sweet Potato	Potato
g	100	100	100	100	100	100
Calories	20.0	40.0	35.3	40	90.4	77
Fibres	1.1	3.4	1.2	1.5	3.5	2.2
Carbs	4.9	10.7	8.2	10	21.1	17
Sugars	2.1	2.0	3.5		6.1	0.8
Fat	0.1	0.1	0.0	0.1	0.0	0.1
Protein	0.7	1.0	1.2	0.8	2.0	2



Nutricion & Taste

Breeding field

Brix direct, Brix freezer & DM



Breeding field

Storage (until 9-jan-2019)



Screening NL Storage Feb 2019



Orange
Summer



Kaori Kuri



17eu03



19NZ-TP07





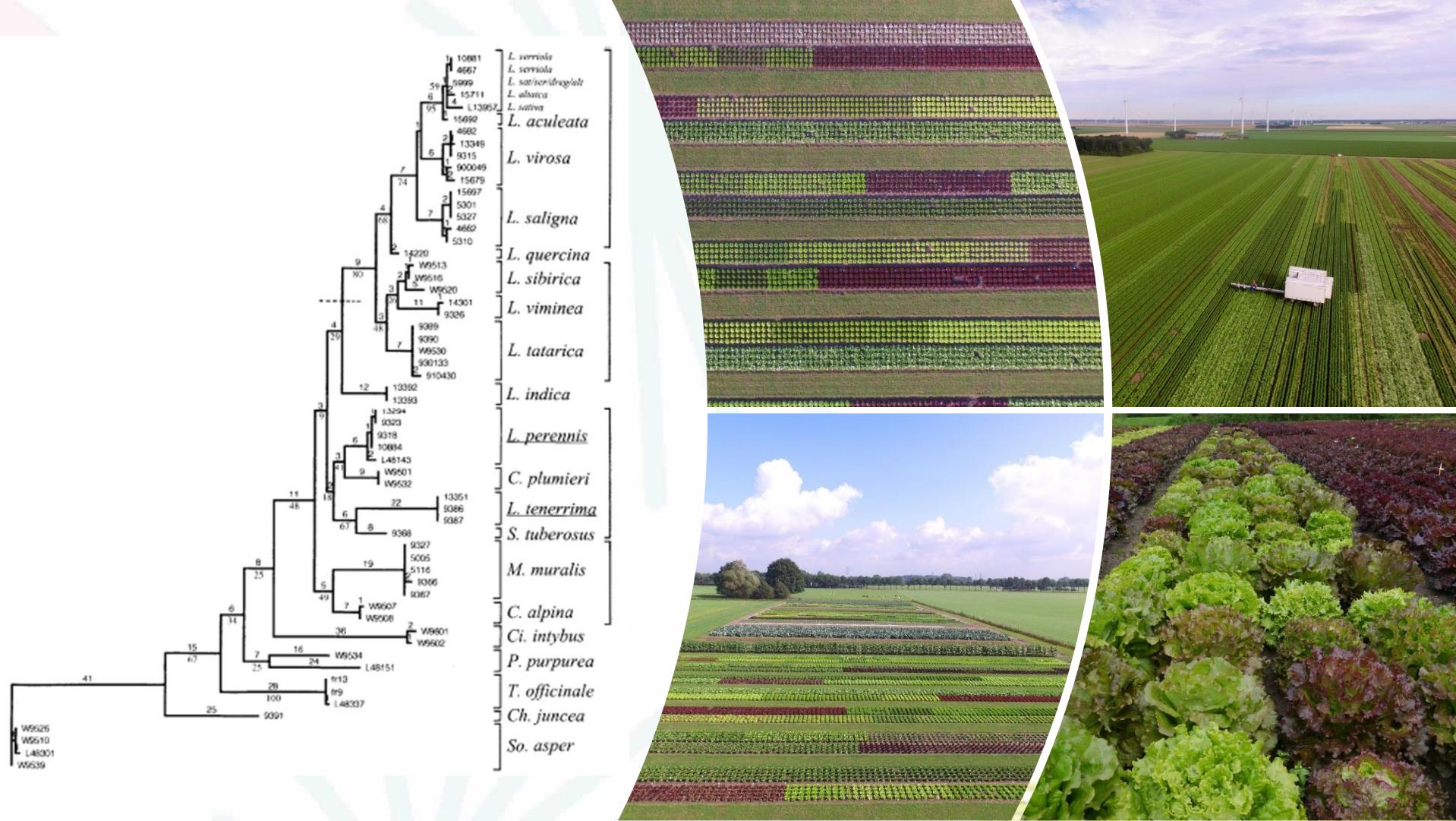
red pumpkin seed multiplication

Organic Pumpkin!



Horizontal DM resistance and resilience in lettuce





Resistances found in divers Lactuca



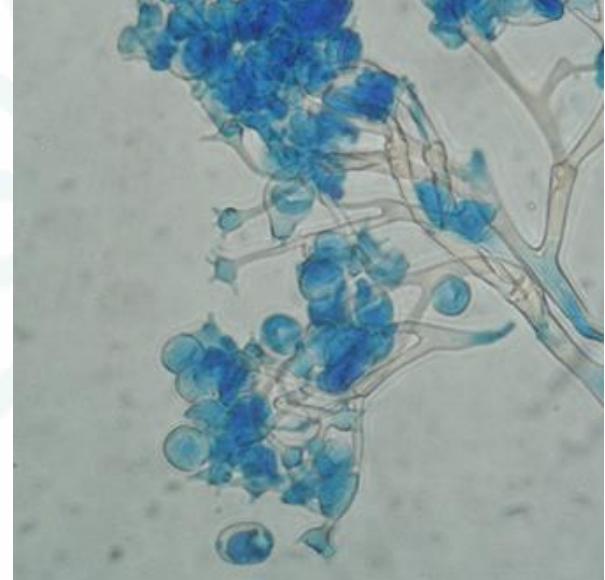
L. serriola



L. virosa



L. saligna



Diversity in Bremia testing







Diversity in hundreds harvested
selected plants







Lettuce seed in big quantities



Lettuce seed harvesting





**NUE, horizontal resistances and weed suppression in spinach
New Tool: Poly crosses**







Aphid tolerance and diversity in Pepper







Cauliflower SI - CMS-hybrid breeding



Cauliflower F1



Endive Breeding



Bolting tolerance





Flowering endive









Organic

Good for nature

Good for you





