Patents on plant genes.
A lockdown for conventional plant breeding

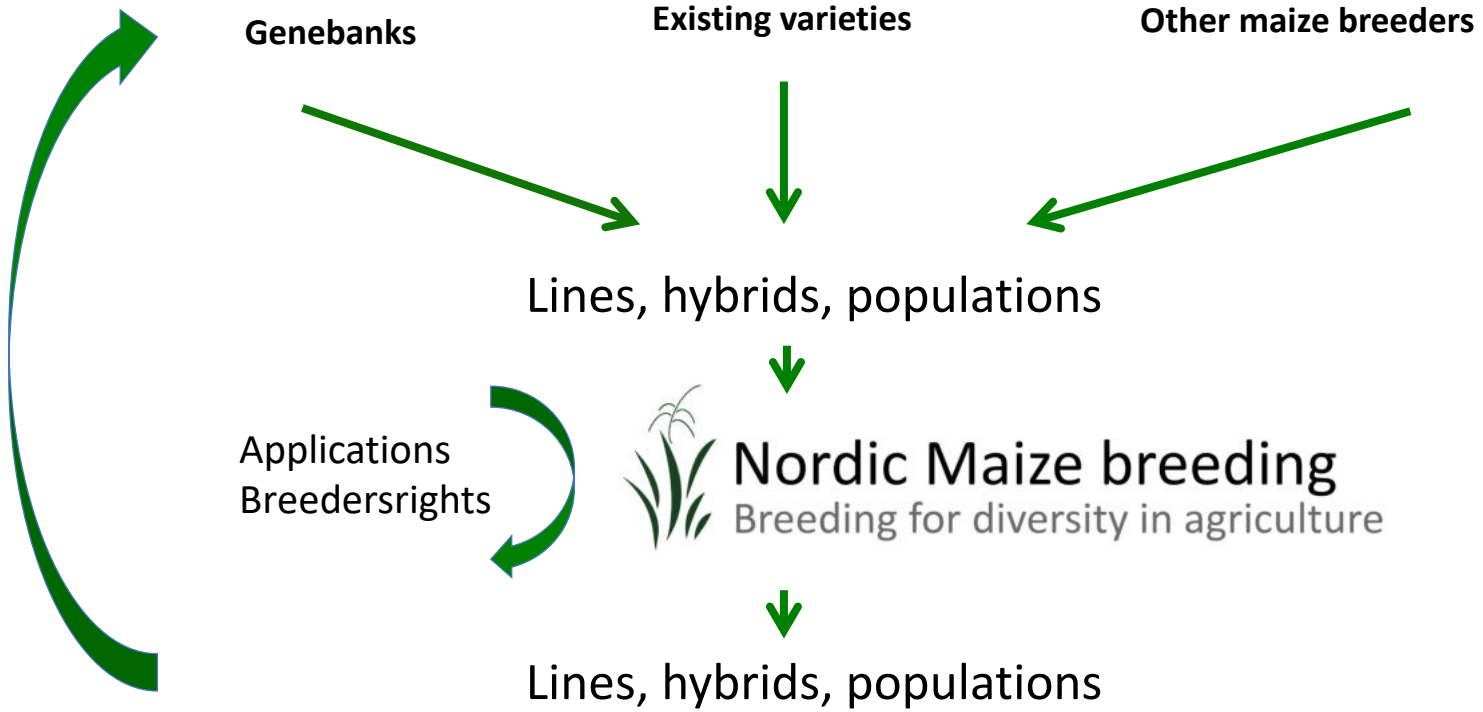
Brussels, 16th November 2022

Nordic Maize breeding
Breeding for diversity in agriculture

Who are we?

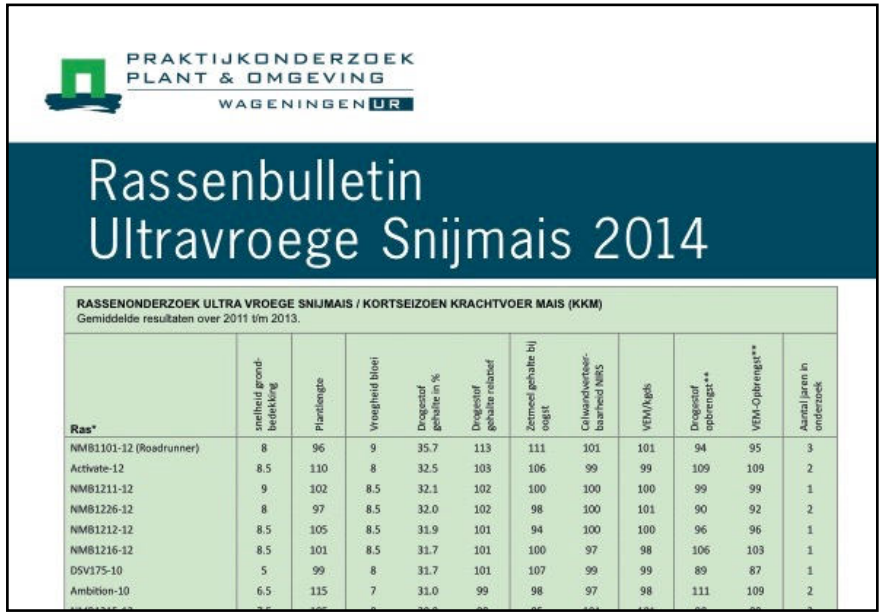
A small, innovative, independent maize breeding company

located in the north of the Netherlands



Specialized in ultra early maize (18 weeks)

*NMB is the first and still the only company that filled a variety under an **organic** DUS testing*



PRAKTIJKONDERZOEK PLANT & OMGEVING
WAGENINGEN UR

Rassenbulletin
Ultravroege Snijmais 2014

RASSENONDERZOEK ULTRA VROEGE SNIJMAIS / KORTSEIZOEN KRACHTVOER MAIS (KKM)
Gemiddelde resultaten over 2011 t/m 2013.

Ras*	snelheid grond-bedekking	Plantlengte	Vroegheid bloei	Drogestof gehalte in %	Drogestof gehalte relatief	Zetmeel gehalte bij oogst	Celwandverteer-baarheid NIRS	VEM/kgds	Drogestof opbrengst**	VEM-Opbrengst**	Aantal jaren in onderzoek
NMB1101-12 (Roadrunner)	8	96	9	35.7	113	111	101	101	94	95	3
Activate-12	8.5	110	8	32.5	103	106	99	99	109	109	2
NMB1211-12	9	102	8.5	32.1	102	100	100	100	99	99	1
NMB1226-12	8	97	8.5	32.0	102	98	100	101	90	92	2
NMB1212-12	8.5	105	8.5	31.9	101	94	100	100	96	96	1
NMB1216-12	8.5	101	8.5	31.7	101	100	97	98	106	103	1
DSV175-10	5	99	8	31.7	101	107	99	99	89	87	1
Ambition-10	6.5	115	7	31.0	99	98	97	98	111	109	2

WAGENINGEN
UNIVERSITY & RESEARCH

RASSENBULLETIN SNIJMAIS ULTRA VROEG - 2022
Groeiseizoen 18 weken

RASSENONDERZOEK SNIJMAIS ULTRA VROEG [1]
Gemiddelde resultaten over 2019 t/m 2021

Ras [2]	Stengelrot resistentie	Steviqheid [3]	Snelheid grond-bedekking	Plantlengte	Vroegheid bloei	Drogestof gehalte in % [4]	Drogestof gehalte relatief	Zetmeel gehalte	Suikergehalte	Celwandgehalte	Celwandverteer-baarheid	VEM/kgds	Drogestof opbrengst	VEM-opbrengst	Aantal jaren in onderzoek
Ultra vroeg															
Flynt	8	*	7.5	99	8.5	34.8	101	101	103	100	101	101	99	100	3
Ambient	6.5	*	7	101	8.5	34.4	99	99	97	100	99	99	101	100	3
Rassen 1 jaar onderzocht															
Ultra vroeg															
NMB18R44	7	*	6.5	96	8	34.2	99	98	111	101	101	100	99	99	1
NMB18R42	7	*	7.5	102	8	33.7	97	95	120	103	98	99	104	103	1
NMB18R52	6	*	7	99	8.5	33.6	97	102	109	99	99	100	104	104	1
NMB18R51	7	*	7.5	102	8.5	33.5	97	96	117	104	100	99	104	103	1
Ultra vroeg / Zeer vroeg															
MGM411946 (MAS 053C)	8.5	*	8.5	108	7	29.7	86	89	116	107	100	99	109	108	1
Skandinav	9	*	9	120	7	29.3	85	86	113	110	102	97	114	110	1
Pyroxenia	8	*	7	113	7.5	29.1	84	93	143	100	99	100	106	105	1
KXC1003	7.5	*	8	113	6	28.7	83	88	110	113	103	97	113	109	1
MaryJane	9	*	8	114	7	28.3	82	83	114	114	103	96	106	102	1
100 = Ambient/Flynt				267			34.6	346	73	382	51.5	986	16.0	15.8	

Nordic Maize breeding
Breeding for diversity in agriculture

With a small programm in winterhardy peas and other small (protein)crops

Wintercereal-winterhardy pea harvest in June

	DM ton/ha	Kg prot/ha
average	7,0	834
Max	9,7	1101
Min	3,7	263

REUDINK
LEADERS IN ORGANIC FARMING

Only organic maize seed producer in the Netherlands

One third of the Dutch market (Reudink/DSV)

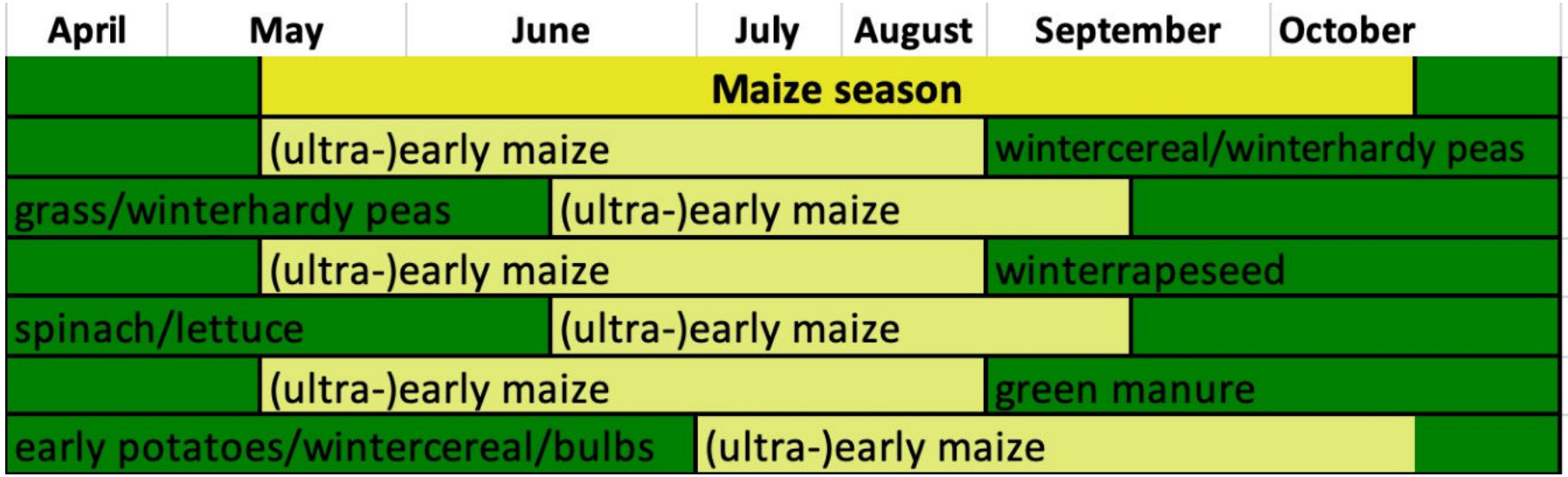
Also for Germany, Finland,
USA, Canada, New Zealand etc.

Seed productions harvested before 1st October

Seed production in
coöperation with farmers

Nordic Maize breeding
Breeding for diversity in agriculture

We advise to grow crops before, after……..



Crop rotations with (ultra) early maize

and with maize

Seed production with clovermixture

Mixture buckwheat and phacelia

Mixture of clovers

NMB tests varieties under organic and no-til circumstances

NMB was the first to develop resilient pea varieties for intercropping systems

We work on projects and research with WUR, LBI and LTO
on maize without chemicals and
on maize with more biodiversity

NMB has about one third on the organic market in the Netherlands
NMB variety is included in portfolio of 2023 of coöperation of 4.000 organic farmers in Germany.
NMB is willing to invest in offical organic variety testing
NMB exports seed to North West Europe, USA, Canada and Chilli

NMB proofs to meet a need
NMB has added value to the transition towards the Green Deal targets

What do patents on seed include for NMB and other small breeders?

Small breeders are forced to make extremely high costs to test their germplasm on the presents of the patented genes, relevant to their relevant turn-over.

Small breeders are not able to carry the costs for such patents.

Small breeders have no/less leverage.

Patents and license to patents will lead to dependency and costs.

Patents on seed will block the freedom of breeding for NMB and other small breeders.

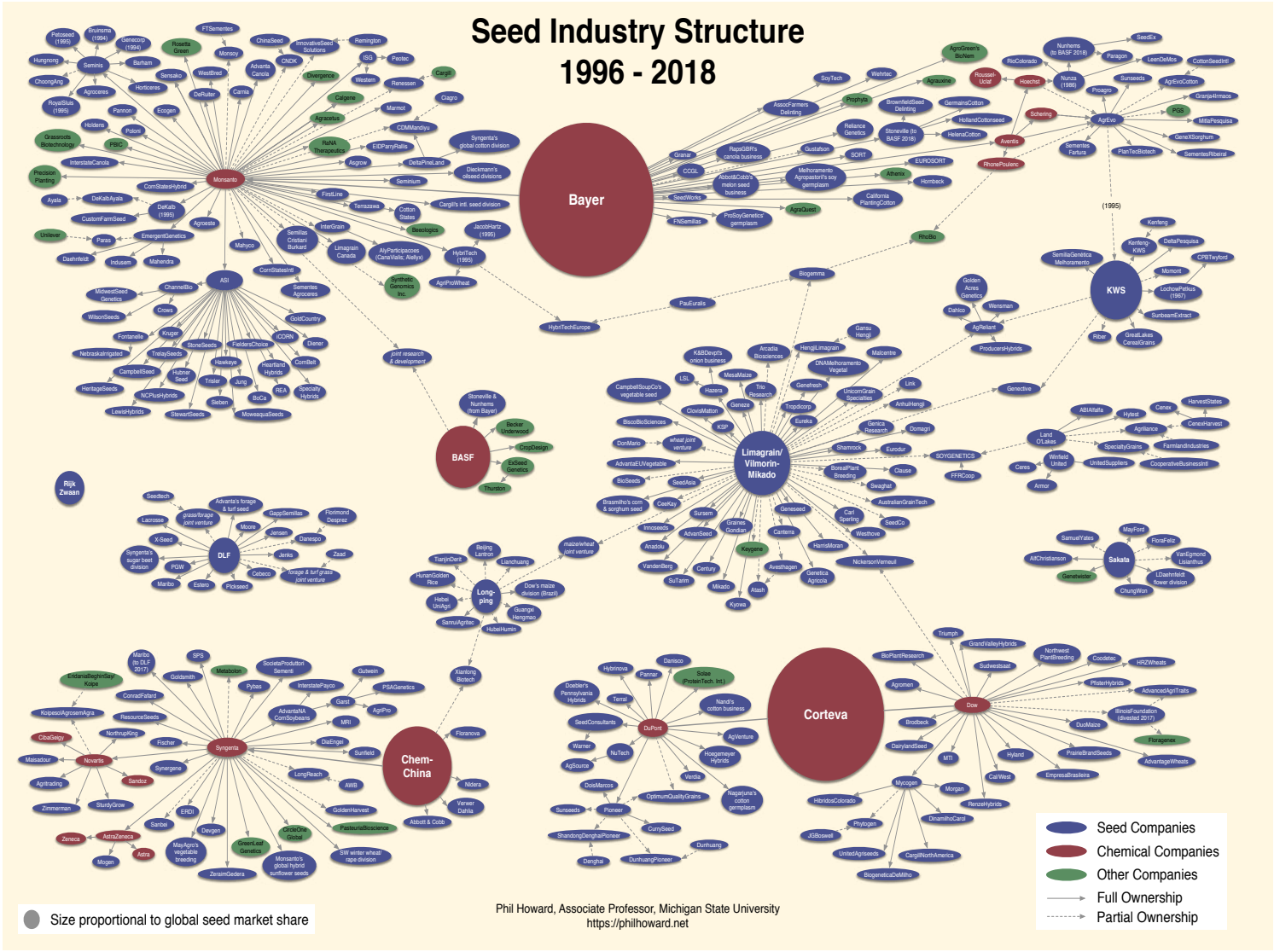
Patents on seed will affect all activities of NMB.

Small breeding companies are

- unbound
- able to create ’out of the box’
- out of the need of extreem efficiency
- able to create ‘not money driven’ innovations
- motivated to serve agriculture instead of investors and shareholders

Small breeding companies strongly depend on

- freely accessible germplasm
- use of the Breeders Exemption



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Thank you for your attention.

Are there any questions?

STOP MONO-CROPPING

Sowing the Seeds of Love

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