Oskar Gustafsson Mellansvenska 2026

HISTORY OF HYBRID WHEAT

- A 50-year-old global quest

- Multiple players all around the world:
  - **Universities and public research institutes** : , USA (Texas, Nebraska), India (2009), China (late 1980s), Australia (Adelaïde)
  - **Public-private collaborations :** Mexico (CIMMYT-Monsanto/1996, then CIMMYT- Syngenta/2019), France (GIE Hybriblé/the 90's), GE (ZUCHTWERT projecT/2019)
  - **Global companies :** Bayer, BASF, Syngenta, CORTEVA (DuPont-Pioneer), KWS, LG
  - **Private companies** :
    - ASUR / SU
    - RAGT
    - HYBALLIANCE 2014 : Berthold Bauer (GE), Caussade Semences and Lemaire Deffontaines (FR), Danko Hodowla (PO) et Saatzucht Donau (AU)
    - Mahyco (variety Pratham 2002/India)
    - China Seeds (2011)

ASUR plant breeding SAATEN UNION Züchtung ist Zukunft

THE RESEARCH OF HYBRID WHEAT

1933 : start of research in USA

1971 : first sales attempt

2019 : Syngenta

CMS system

1930 1940 1950 1960 1970 1980 1990 2000 2010 2020 2030

1960 : start of research on CHA*

1995 : first commercial hybrid

CHA system

Research period

Commercialisation

Stop of activities

***CHA :**

- One from Rohm & Haas
- **WL 84811** (not registered) ∈ Shell > Nikerson > LG
- **GENESIS** (withdrawn in 2002) ∈ Monsanto > HybriTech
- **Croisor 100** ®(registered in FR, GE, CZ, HU, SK) ∈ Hybrinova > DuPont > ASUR

1994: Firsts commercial hybrid wheat : Hyno-Precia and Domino
1999: First SU hybrid (Nordsaat): HYBNOS 1
2012: 200,000 ha in Europe
2023: 80,000 ha
2025: New Generation 2.0 - **100 000 ha**

ASUR plant breeding SAATEN UNION Züchtung ist Zukunft

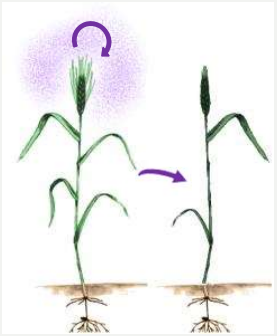
CMS:
Cytoplasmic male sterility

CHA:
Chemical hybridizing agents

Vad är hybridvete ?

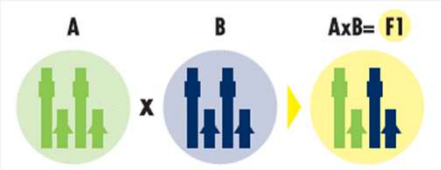
Konventionell sort:

- Självpollinerande gröda
- Standard sorter på marknaden = linjesorter
- identiska set av Kromosomer

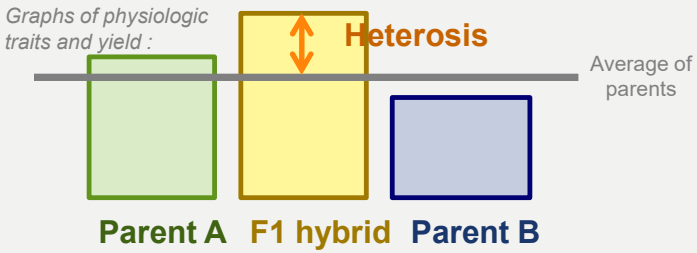


Hybridvete:

- Korsning mellan två olika linjesorter
- "Faderlinje" (A) ger pollen
- "Moderlinje" (B) utan pollen,
- Producerar hybrid utsädet med olika set av kromosmer



Heterosis effect :

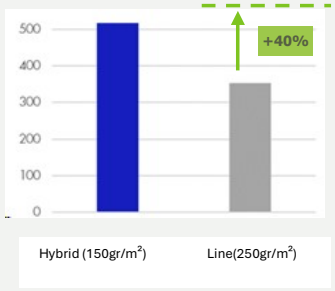


Height difference due to heterosis:

Förädlingsmål med hybridvete

Kraftigare bestockning

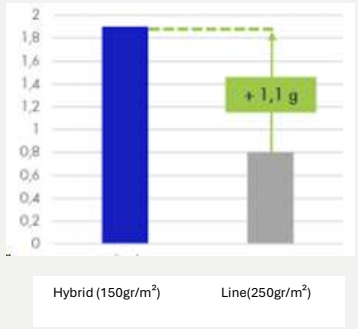
Ear density /m^2



Kraftigare rotsystem

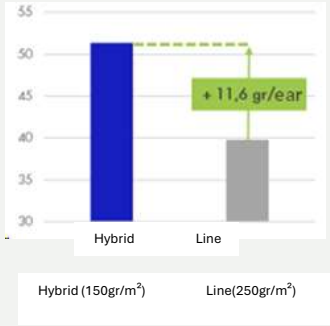
Line Hybrid

Dry weight of roots (g)



Högre kärnsättning

Ear fertility (gr/ear)



Målsättningen är att utnyttja hybridiseringen och de kumulativa egenskaperna från två olika föräldrar mot specifika kriterier

- Sjukdomsresistens
- Kärnkvalitet
- Vinterhärdighet
- Hög skörd och god skördestabilitet

→ maximal heterosiseffekt (10 to 15 % i Vete)

Major traits by knowledge and molecular markers like :

In the future:

→ **Working on ByDV resistance with a new screening in 2025 …**

FÖRÄDLINGSSTEGE

Conventional wheat breeding timelapse (DH)

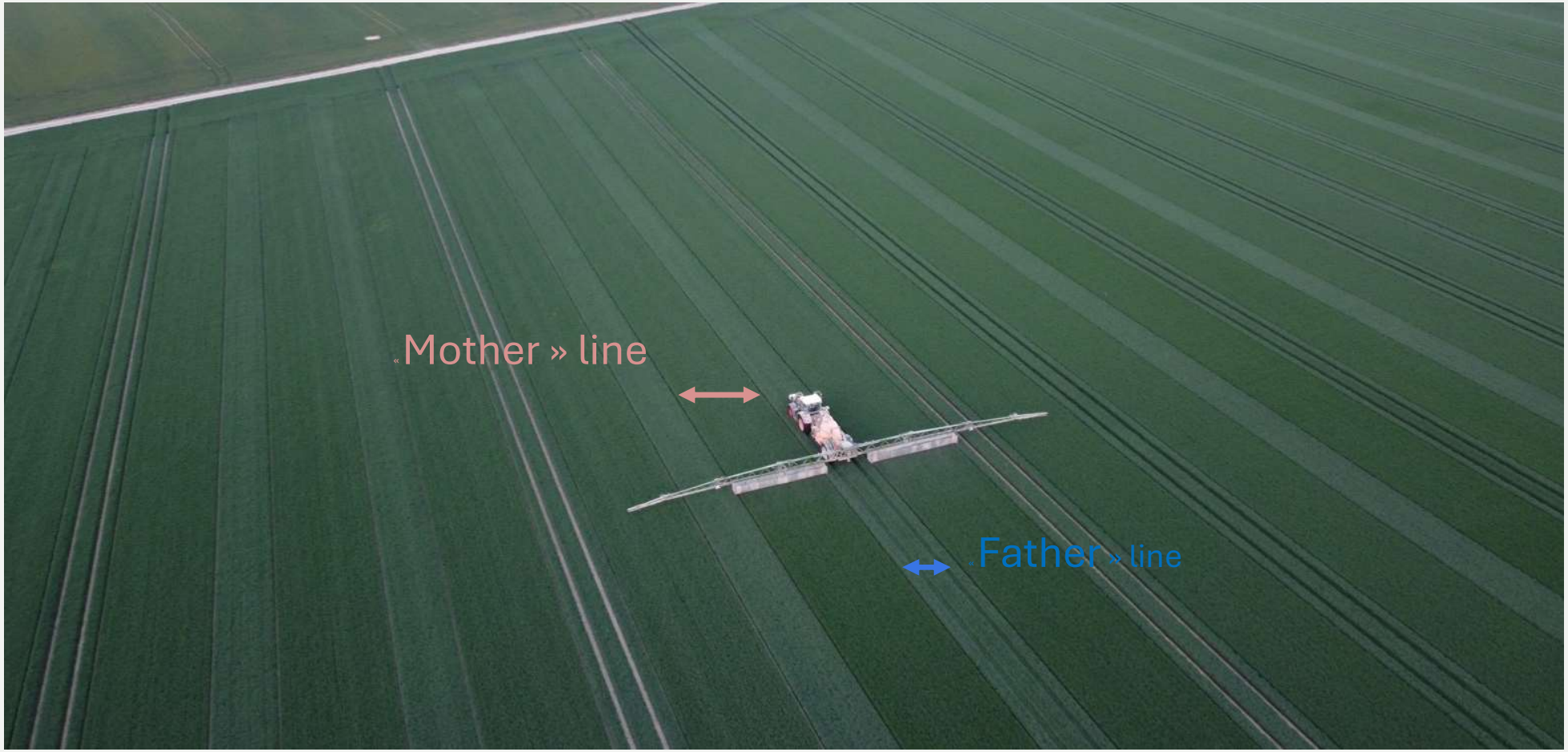
- N: • Initial crossing
- N+1: • Seed production in greenhouse of fixed plants
- N+2: • Nursery in the fields
- N+3: • Disease microplots
- N+4: • 1st year of testing
- N+5: • 2nd year of testing
- N+6: • National List – 1st year
- N+7: • National List – 2nd year
- N+8: • Registration

VS

Hybrid wheat breeding timelapse

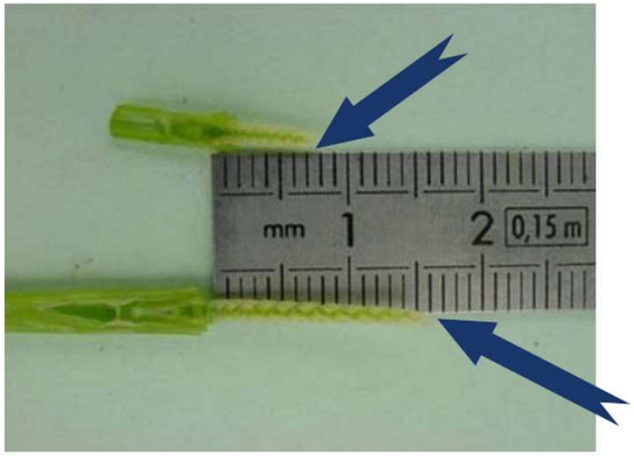
- N: • Parental cross
- N+1: • 1st year of testing
- N+2: • 2nd year of testing
- N+3: • National List – 1st year
- N+4: • National List – 2nd year
- N+5: • Registration

Utsädesproduktion



SPRAYING STAGE

- **When to spray ? → During a specific and narrow period of growth vegetation**
  The stage is calculated from the average of 30 main stem



DC Stadie 31-32

HYBRID WHEAT

HYVEGA NORD 16/926

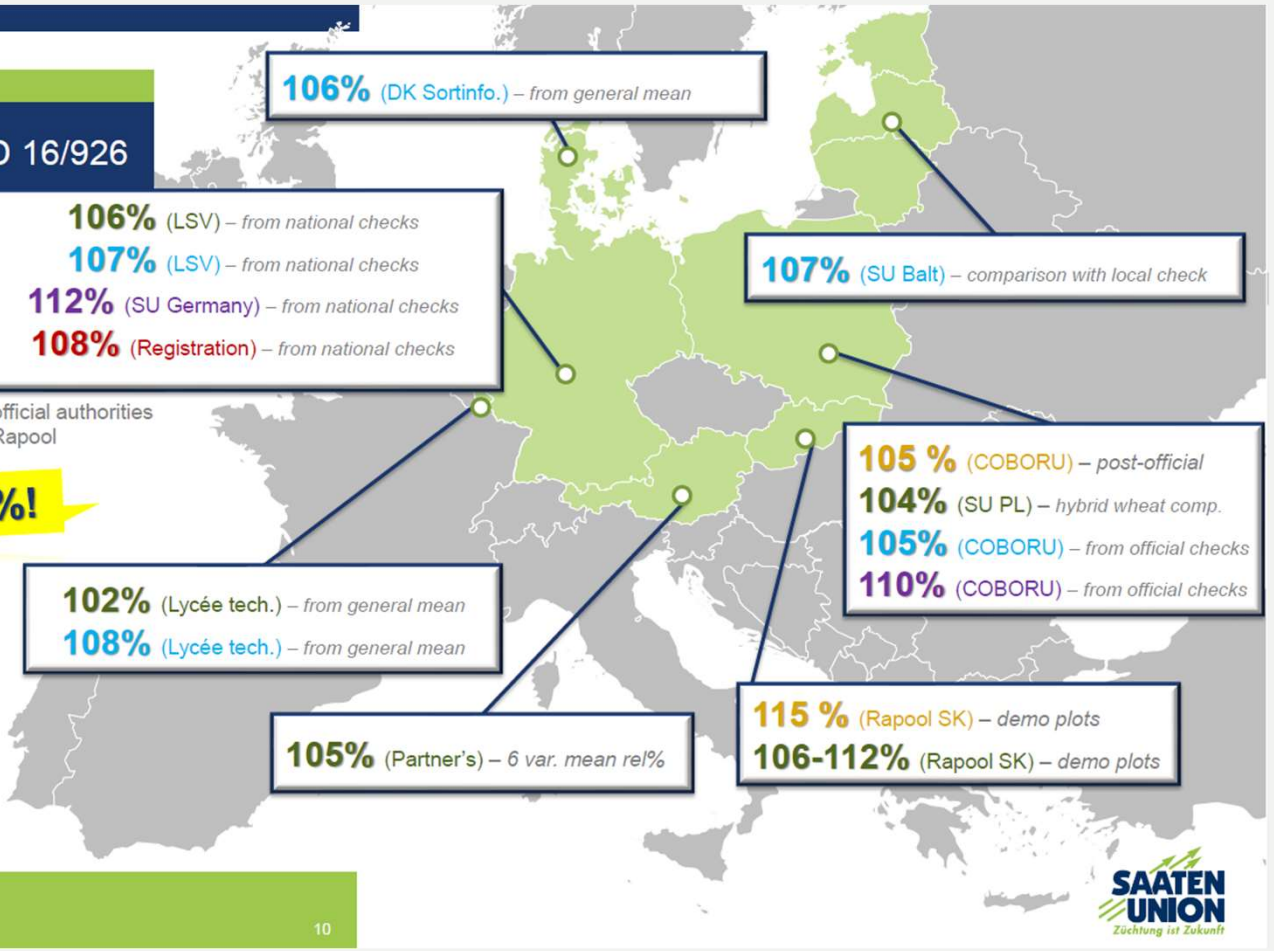
MULTI-COUNTRIES & MULTI-YEARS PERFORMANCES

Results obtained from official and post-official authorities or product management trials frum SU/Rapool

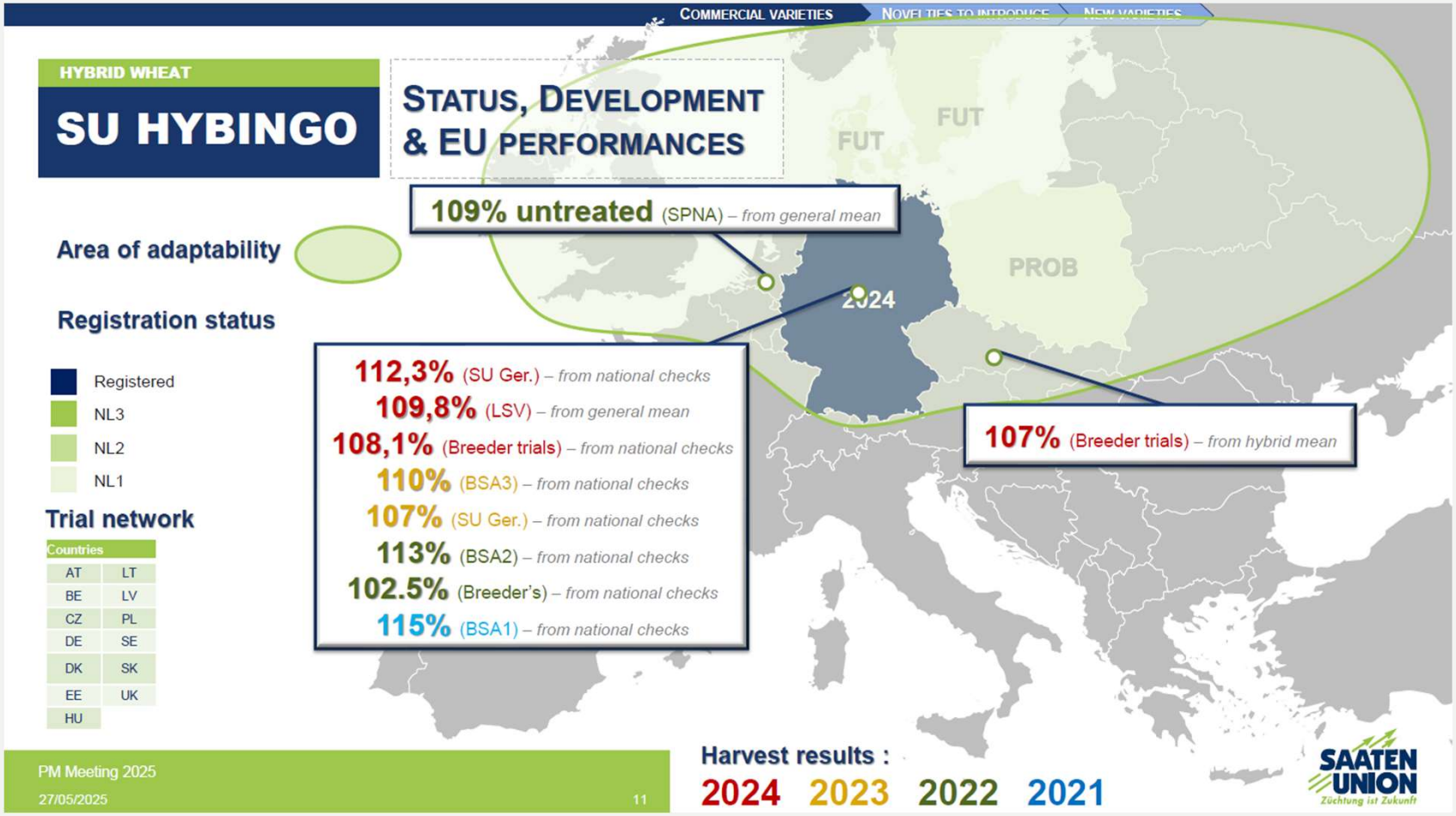
107%!

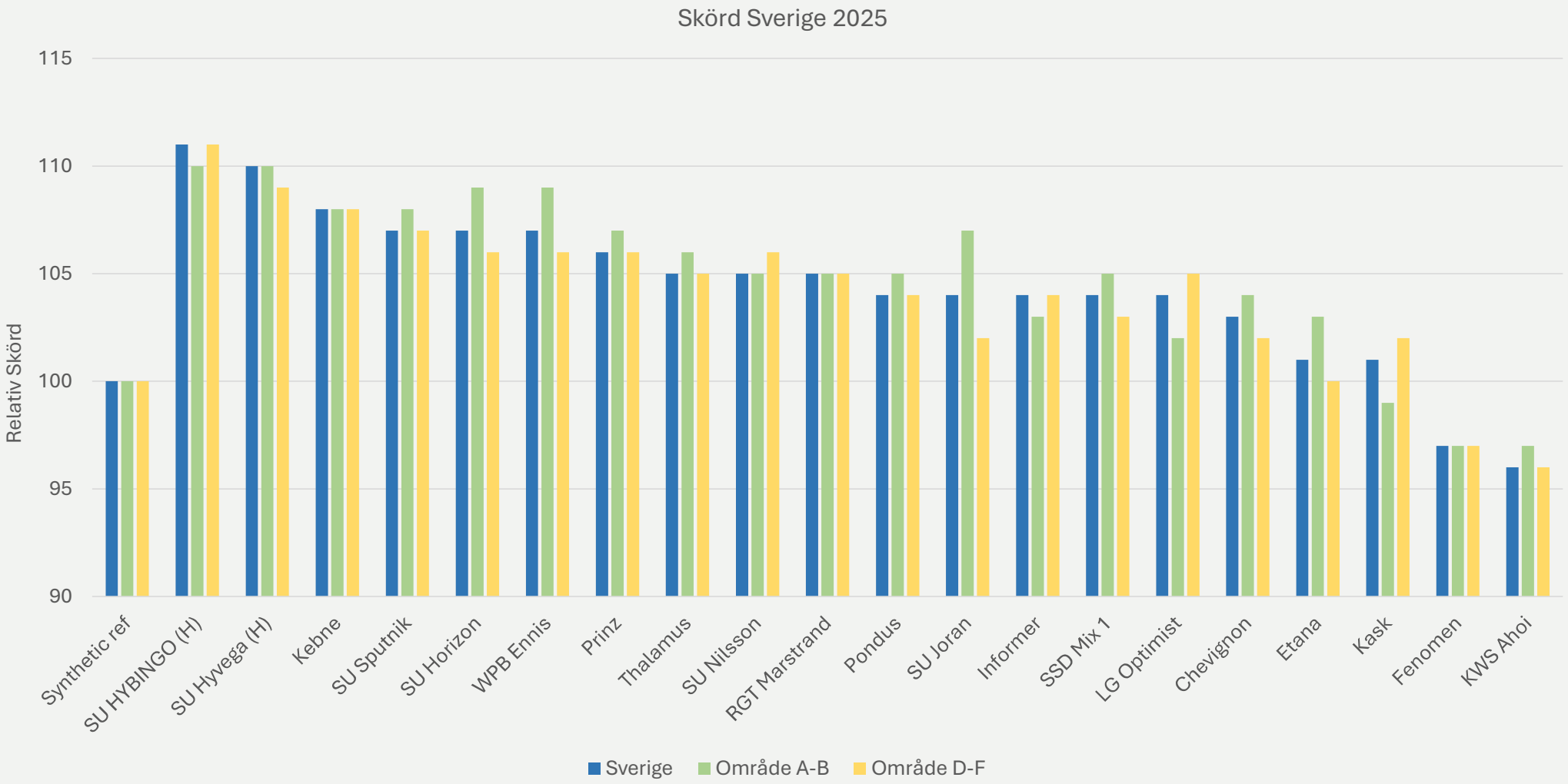
Harvests:

2023
2022
2021
2020
2019



SAATEN UNION
Züchtung ist Zukunft

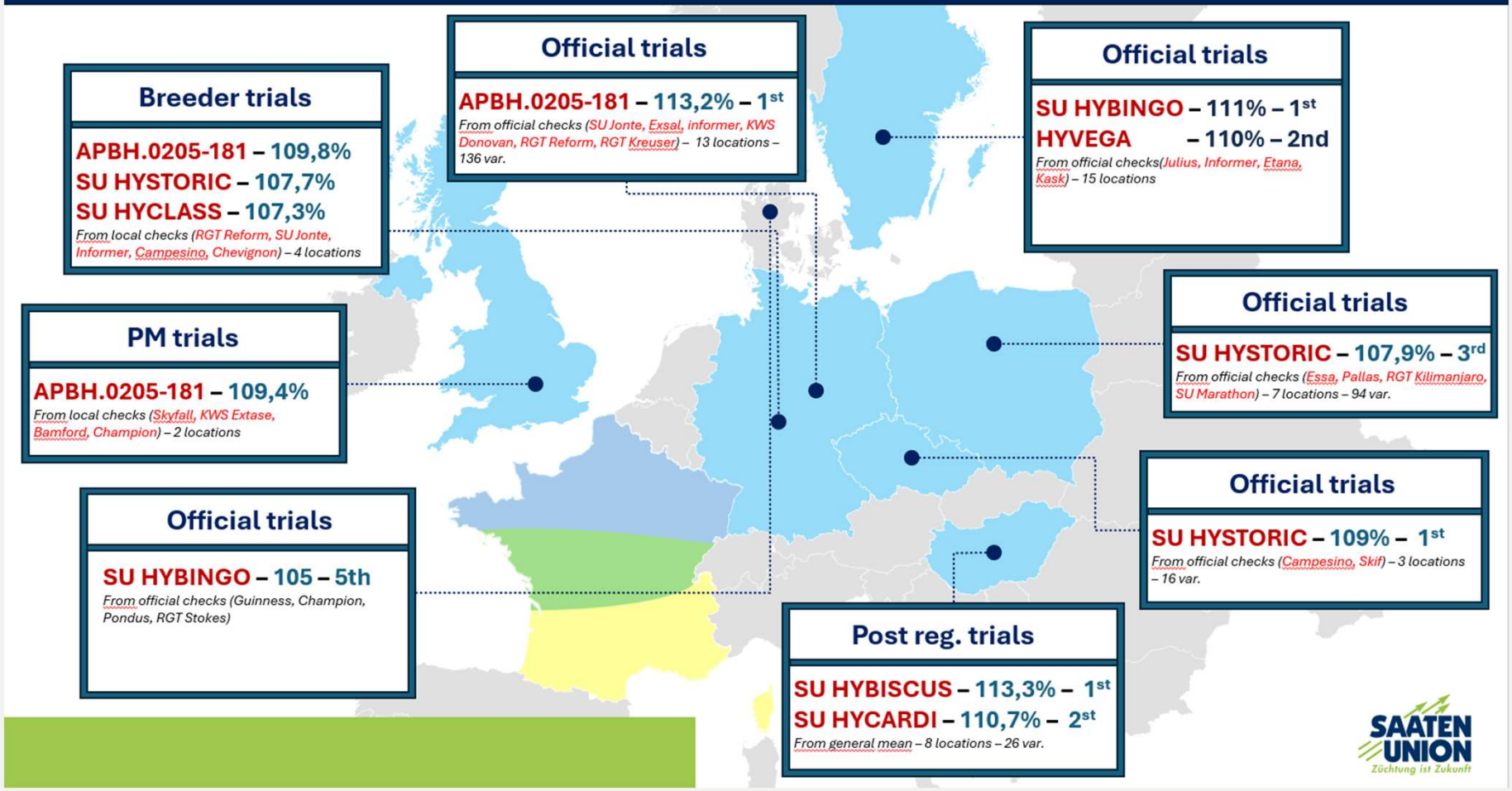

COMMERCIAL VARIETIES
NOVELTIES TO INTRODUCE
NEW VARIETIES
HYBRID WHEAT
SU HYBINGO
STATUS, DEVELOPMENT & EU PERFORMANCES
FUT
FUT
PROB
109% untreated (SPNA) – from general mean
2024
Area of adaptability
Registration status
Registered
NL3
NL2
NL1
112,3% (SU Ger.) – from national checks
109,8% (LSV) – from general mean
108,1% (Breeder trials) – from national checks
110% (BSA3) – from national checks
107% (SU Ger.) – from national checks
113% (BSA2) – from national checks
102.5% (Breeder's) – from national checks
115% (BSA1) – from national checks
107% (Breeder trials) – from hybrid mean
Trial network
Countries
AT LT
BE LV
CZ PL
DE SE
DK SK
EE UK
HU
PM Meeting 2025
27/05/2025
11
Harvest results :
2024 2023 2022 2021
SAATEN UNION
Züchtung ist Zukunft


Skörd Sverige 2025
Relativ Skörd
115
110
105
100
95
90
Synthetic ref
SU HYBINGO (H)
SU Hyvega (H)
Kebne
SU Sputnik
SU Horizon
WPB Ennis
Prinz
Thalamus
SU Nilsson
RGT Marstrand
Pondus
SU Joran
Informer
SSD Mix 1
LG Optimist
Chevignon
Etana
Kask
Fenomen
KWS Ahoi
Sverige
Område A-B
Område D-F

OT 2025

Map of hybrid wheat results – Harvest 2025

September 2025



Breeder trials

APBH.0205-181 – 109,8%
SU HYSTORIC – 107,7%
SU HYCLASS – 107,3%
From local checks (RGT Reform, SU Jonte, Informer, Campesino, Chevignon) – 4 locations

Official trials

APBH.0205-181 – 113,2% – 1st
From official checks (SU Jonte, Exsal, informer, KWS Donovan, RGT Reform, RGT Kreuser) – 13 locations – 136 var.

Official trials

SU HYBINGO – 111% – 1st
HYVEGA – 110% – 2nd
From official checks(Julius, Informer, Etana, Kask) – 15 locations

PM trials

APBH.0205-181 – 109,4%
From local checks (Skyfall, KWS Extase, Bamford, Champion) – 2 locations

Official trials

SU HYSTORIC – 107,9% – 3rd
From official checks (Essa, Pallas, RGT Kilimanjaro, SU Marathon) – 7 locations – 94 var.

Official trials

SU HYSTORIC – 109% – 1st
From official checks (Campesino, Skif) – 3 locations – 16 var.

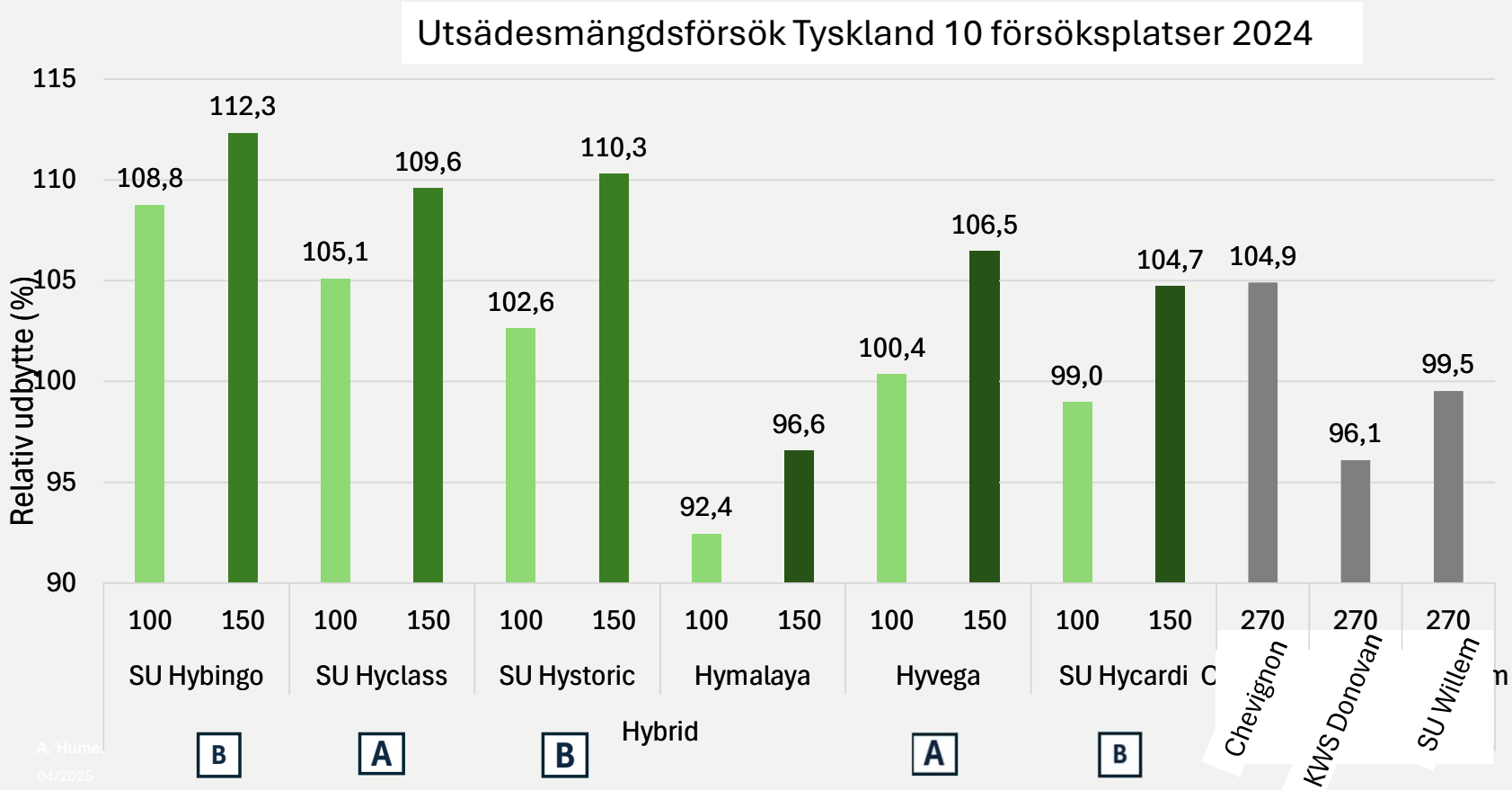
Official trials

SU HYBINGO – 105 – 5th
From official checks (Guinness, Champion, Pondus, RGT Stokes)

Post reg. trials

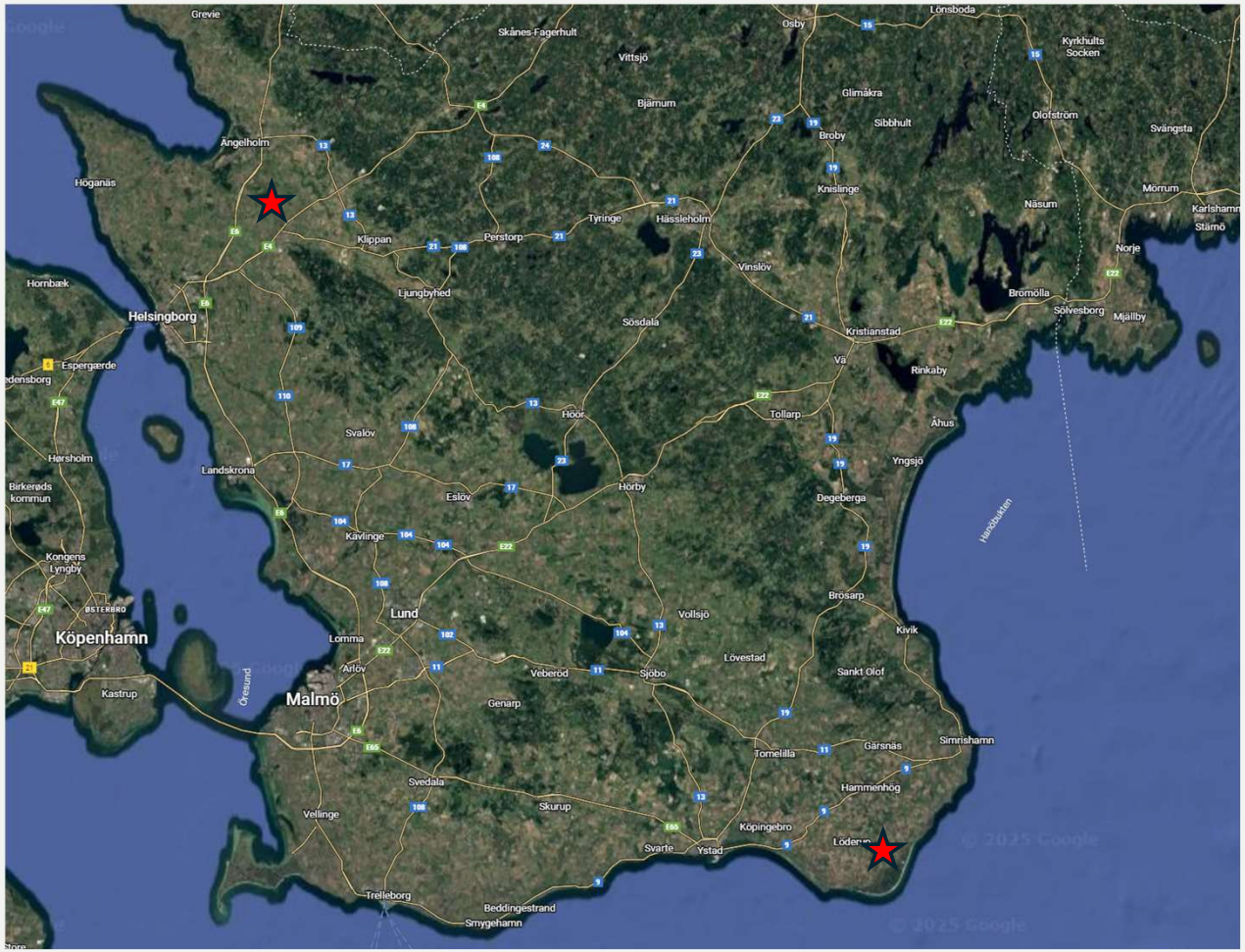
SU HYBISCUS – 113,3% – 1st
SU HYCARDI – 110,7% – 2st
From general mean – 8 locations – 26 var.

SAATEN UNION
Züchtung ist Zukunft


Utsädesmängdsförsök Tyskland 10 försöksplatser 2024
Relativ udbytte (%)
115
110
105
100
95
90
108,8
112,3
105,1
109,6
102,6
110,3
92,4
96,6
100,4
106,5
99,0
104,7
104,9
96,1
99,5
100
150
100
150
100
150
100
150
100
150
100
150
270
270
270
SU Hybingo
SU Hyclass
SU Hystoric
Hymalaya
Hyvega
SU Hycardi
Chevignon
KWS Donovan
SU Willem
Hybrid
B
A
B
A
B

SÅTIDSFÖRSÖK 2025 TYSKLAND. 1 FÖRSÖK MOOSBURG , BAYERN.
TIDIG SÅDD: 07-10-2024
SEN SÅDD: 28-10-2024

Utsädesmängdsförsök 2026



Led	Utsädesmängd
SU Hyvega (H)	100 $grob/m^2$
SU Hyvega (H)	150 $grob/m^2$
SU Hyvega (H)	200 $grob/m^2$
SU Hyvega (H)	250 $grob/m^2$
SU Hyvega (H)	300 $grob/m^2$
SU Joran (L)	200 $grob/m^2$
SU Joran (L)	250 $grob/m^2$
SU Joran (L)	300 $grob/m^2$
SU Joran (L)	350 $grob/m^2$
SU Joran (L)	400 $grob/m^2$

Tack för uppmärksamheten!
Frågor ?

Oskar Gustafsson
Produktchef

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