

Finnish VCU system

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Agriculture in Finland

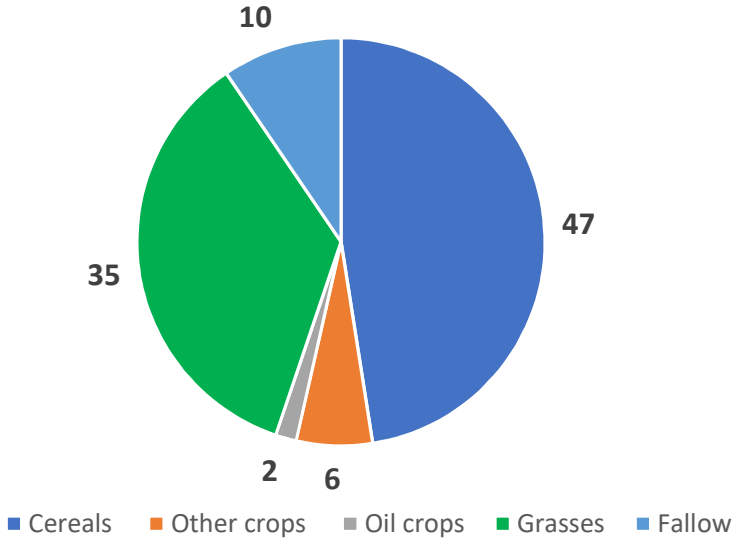
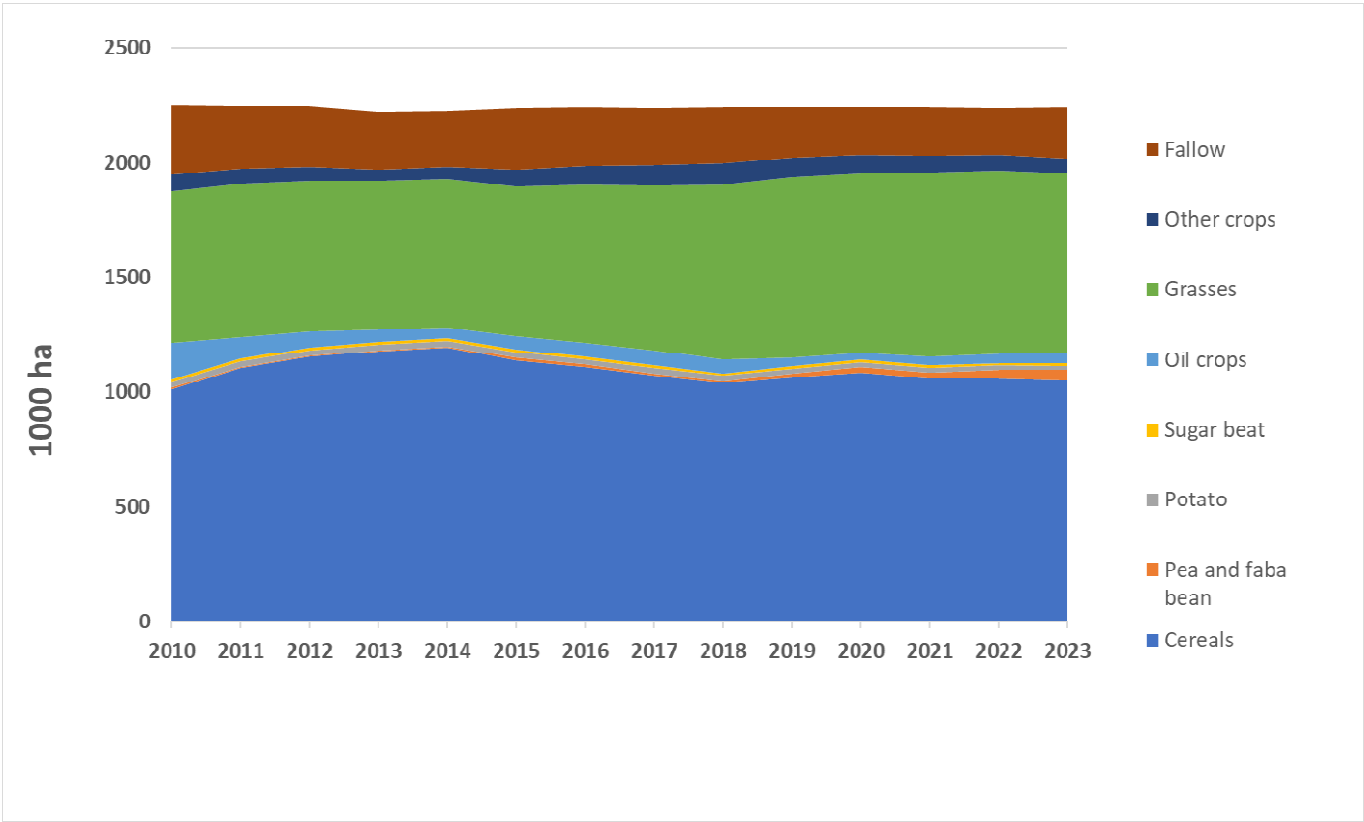
Geographic

- 75% of Finland's land area is forest
- 2,2 million ha fields
- The northernmost agricultural country in the world
 - The Gulf Stream
- 1150 km long
 - Growing conditions vary greatly
- Special circumstances
 - Hard winter
 - Short growing period
 - Long days in summer
 - Helsinki (13.5-22.6) 17 hours – 18 hours 50 min
 - Rovaniemi (13.5-22.6) 18 h 23 min – 24 hours

Agriculture production

- In 2023 Finland there were approximately 42 000 farms In Finland
 - In 1995 approximately 120 000 farms
- Average farm size 54 ha field /farm
 - 2010 (39 ha/farm)
- Structure of farms in 2023
 - Cereal production 13 600 farms
 - Other plant production 16 800
 - Milk production 4200 farms
 - Beef production 2500 farms
 - Pig husbandry 378 farms
 - Poultry husbandry 370 farms

Plant production production in Finland



Source : Luke statistics
<https://www.luke.fi/fi/tilastot>

Plant production in Finland

Cereal production

- South and West Finland
- 1,05 milj ha (2023)
 - Barley 39 %
 - Oat 31 %
 - Spring wheat 17 %
 - Autumn wheat 6 %
 - Rye 3 %
- Oil crops 38,8 thousand ha (2023)
 - Turnip rape and rape
 - Spring types dominates

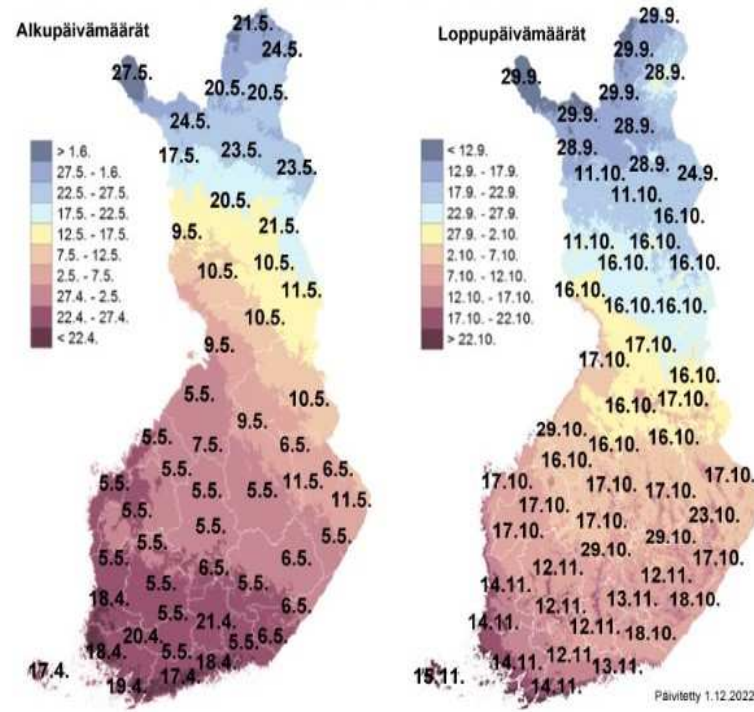
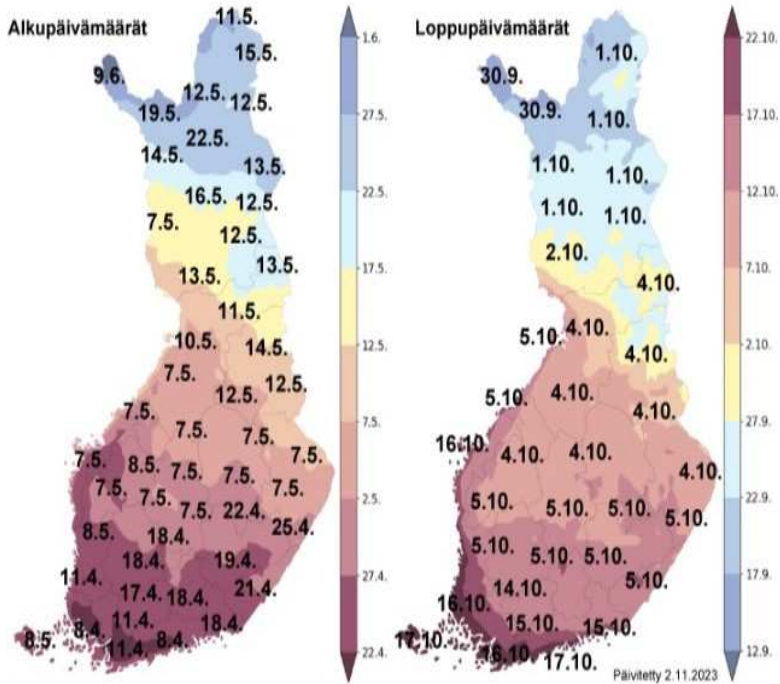
Grass production

- East and North Finland
- Mixtures
 - Timothy
 - Meadow and tall fescues
 - Red clover
- 2-3 cuttings during the growing season
 - Silage production

Growing season in Finland

2023

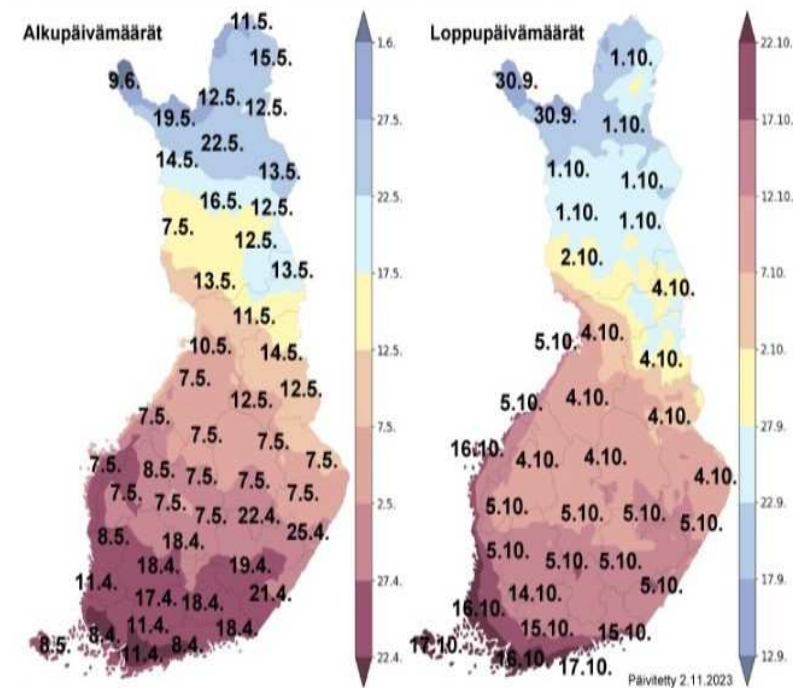
2022



Source: Finnish Meteorological institute
<https://www.ilmatieteenlaitos.fi/kasvukausi-2023>

Growing season in Finland

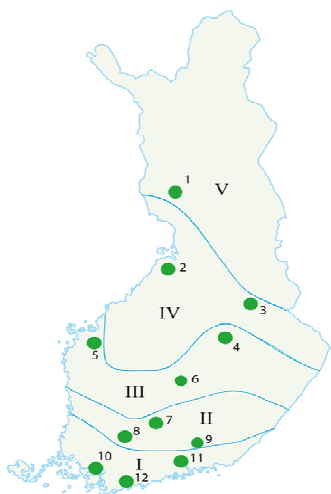
2023



- Lot of variation
 - Also between the years
- Based on the temperature sum
 - > 5° C temperature
- South Finland and middle Finland
 - 150-210 days
- North Finland
 - 130-150 days

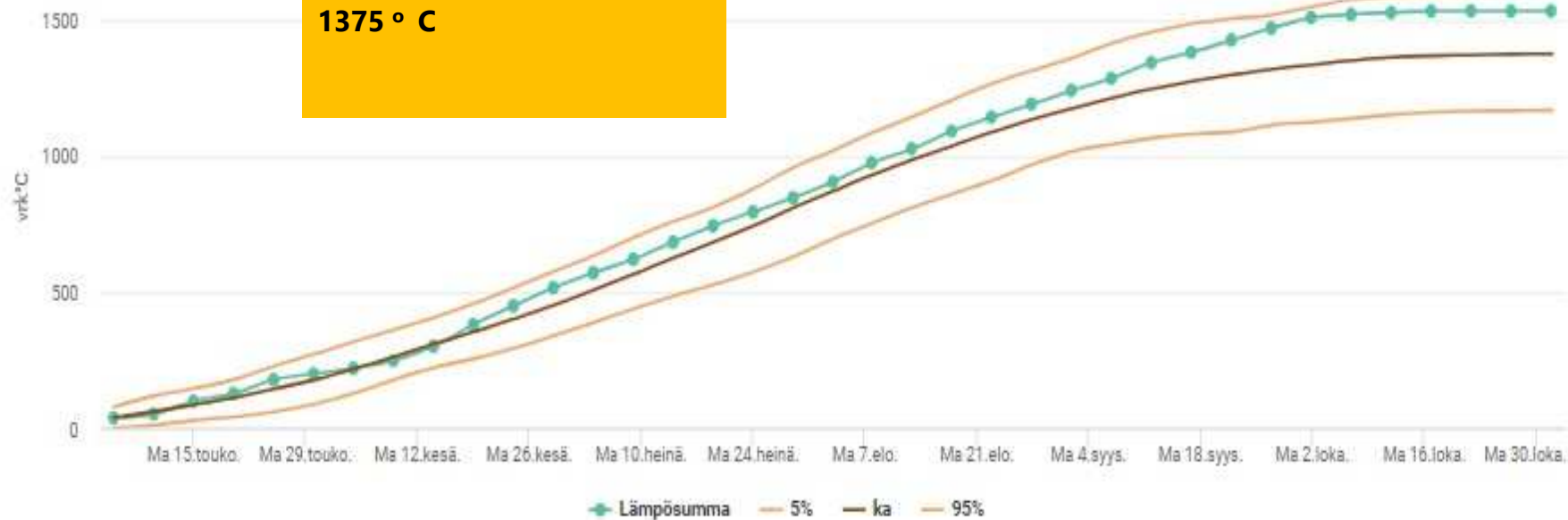
Temperature sum in Jokioinen South-west Finland

2023



**Average temperature sum in
Jokioinen 1961-2023**

1375 ° C



Official variety trials

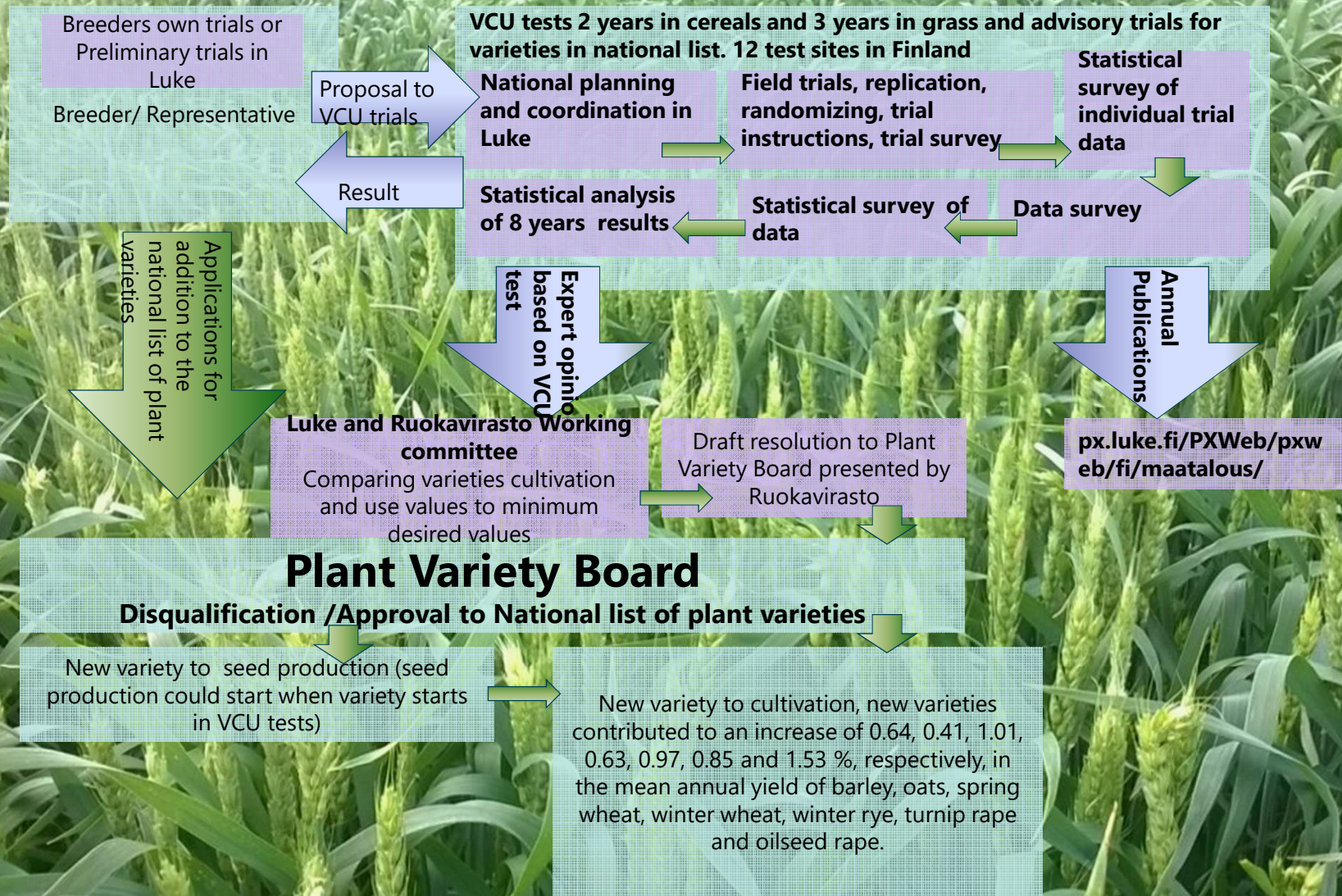
How we do these

- 5 researchers, 2 biometricians (organization of the trials)
- Checking, treating, and delivering seeds to trial stations
- Luke does trials in 3 locations (7 researchers/technicians)
- Boreal plant breeding 5 trial sites, Lantmännen 1, NSL 2
- Each crop 5-10 trials around Finland (3-4 zones) (3 replicates)
- small plot disease trials at Luke
- Cereals 2 years, grasses 3
- Ruokavirasto (Finnish food authority) does DUS testing for new varieties
- Treated seed in the trials, no disease control (only herbicide and insecticides if needed)
- Data published in pxWeb <http://px.luke.fi/PXWeb/pxweb/fi/maatalous/> (8 year data)
- Statement to accept/deny new variety (Plant variety board)
- New crops or organic variety trials in the future
- varietytesting@luke.fi
- <https://www.luke.fi/fi/luonnonvaratieto/tiedetta-ja-tietoa/viralliset-lajikekokeet>

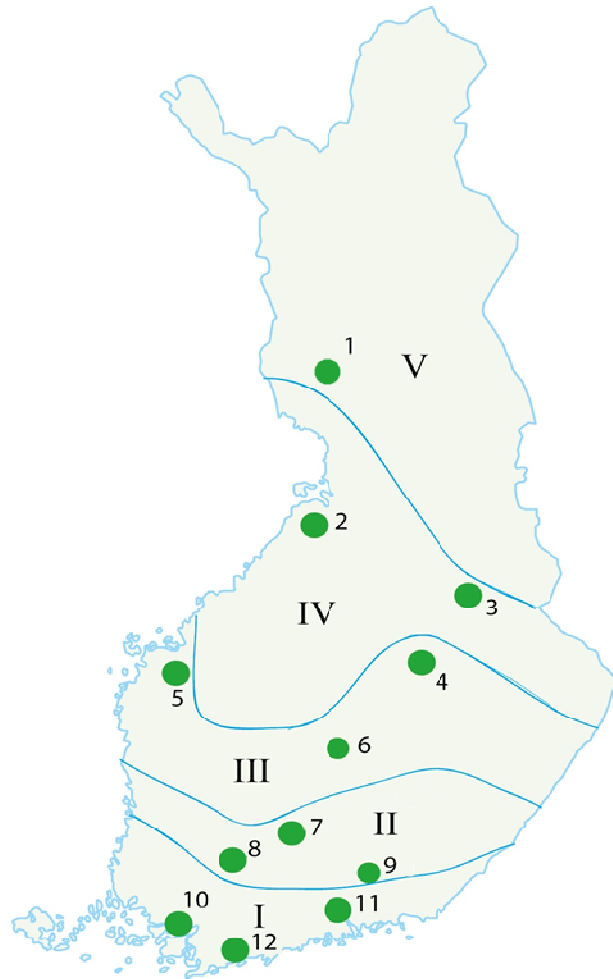


Variety Cultivation and Use testing in Luke

Degree of Ministry of Agriculture and Forestry 51/04



Units of Natural Resources Institute Finland (Luke) and the other trial sites



1. LOUE, TERVOLA, Ammattiopisto Lappia
2. RUUKKI, SIIKAJOKI (Luke)
3. SOTKAMO, Boreal Plant Breeding Ltd.
4. MAANINKA (Luke)
5. ISOKYRÖ (Bor)
6. LAUKAA, Jyväskylän seutu (Bor)
7. HAUHO, Hämeenlinna, Experimental farm of K Group
8. JOKIOINEN (Luke)
8. JOKIOINEN (Bor)
9. IITTI (NSL)
10. LIETO, Turun seutu (Bor)
11. PERNAJA, ProAgria Nylands Svenska Lantbrukssällskap (NSL), Storsarvlax Farm
12. INKOO, ProAgria Nylands Svenska Lantbrukssällskap, Västankvarn School Farm

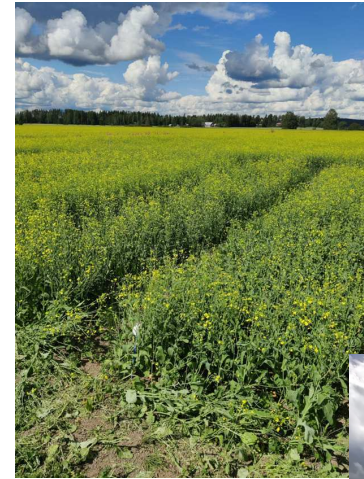
Official variety trials

Field crops

- Winter rye (10 varieties)
- Winter wheat (15)
- Winter triticale (5)
- Winter barley (8) (new crop 2022)
- Winter turnip rape, rape (2+2)
- Spring barley (29 varieties)
- Spring wheat (23)
- Spring oat (15)
- Pea (8)
- Faba bean
- Spring turnip rape and rape (3)
- Oil seed hemp (4) (new crop 2021)

Feed grasses

- Timothy (9)
- Meadow fescue (6)
- Tall fescue (3)
- Festulolium
- Cocksfoot grass
- Annual ryegrass (4)
- Perennial ryegrass (2)
- Red clover (7)
- Alsike clover (1)
- White clover (3)



Official variety trials

Observations cereals and field crops

- Winter damage, germination
- Length
- Diseases (cereals only)
- Lodging
- Maturity day
- Yield and all yield analysis
- (DON)
- Baking quality
- Chlorofyl, oil content, THC

Feed grasses

- Germination
- Density, winter damage
- 1-3 yield
- Botanical analysis
- Quality

Participants:

Boreal, Lantmännen, Nordic Seed,
Plantanova, Tilasiemen, SGN, Berner,
Syngenta, DLF, RAGT 2n, Strube, Savola,
Transfarm



Things causing problems to the trials



Pests, winter damages, dry springs etc.

Sometimes everything goes well



Thank you!



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