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NORSK INSTITUTT FOR BIOØKONOMI

Field trials in grain and forage seeds in Norway; diversified topics and challenges

Chloé Grieu – NFTN 1. Conference, Apelsvoll 08/02/2023

Picture: C. Grieu

Grain production in Norway

3 % of the surface of Norway is cultivated land

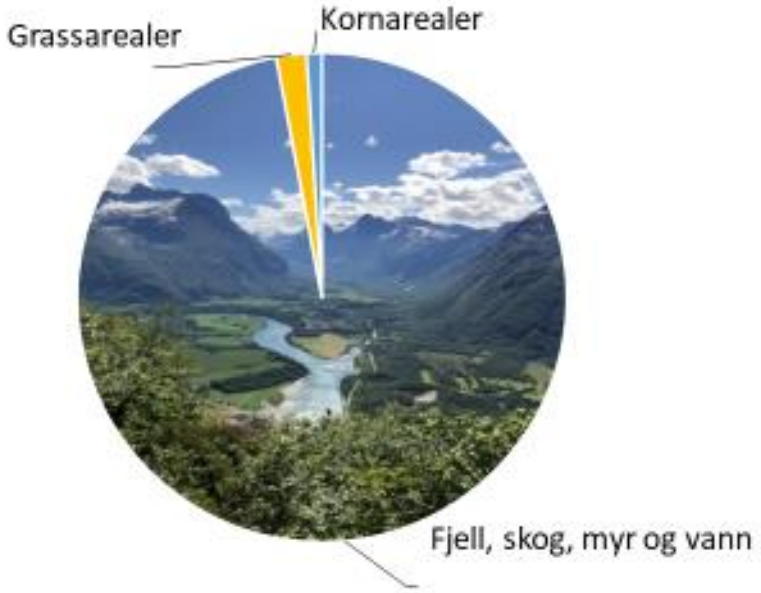
1 million haa of which 30 % are suitable for grain cultivation. Food grade wheat is produced mainly around the Oslo fjord

<u>Surface of cereal, rapeseed and protein crops in 2020 (SSB)</u>:

139 200 ha spring barley
66 550 ha spring oat
48 530 ha spring wheat
19 140 ha winter wheat
6530 ha rye
4800 ha peas, faba beans, other legumes
2970 ha rapeseed and turnip rape

Picture; U. Abrahamsen

Where do we cultivate cereals?



Geografisk fordeling av agroklimatiske soner i Norge, basert på Skjelvåg (1987), utarbeidet av NIBIO.

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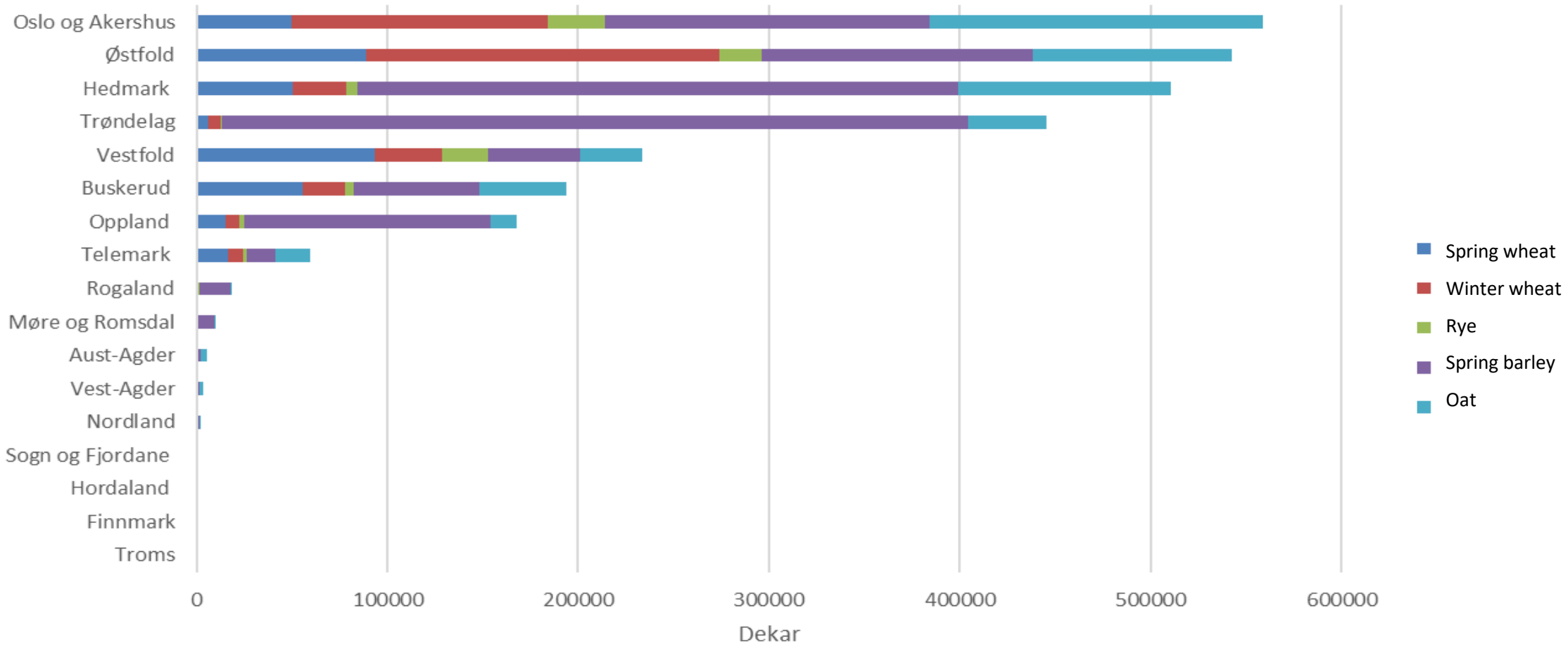

Source; SSB

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Research activities in Dept. grain and forage seed agronomy

Cultivar trials
Cereals, oilseed crops, legumes, forage seed crops, «newer» crops

Plant protection and IPM strategies

Fertilisation strategies

Soil health and structure

Crop rotations

Catch crops

Organic production

approx. 50 experimental plans in 2022 (majority in NFTS)

approx. 200 trials over Norway

45 located on site at Apelsvoll

thousands of analysed yield samples

Apelsvoll Cropping System Experiment

33 years with data from 1989 to 2022

6 different systems, conventional and organic agriculture

Measurements:
yields and quality, leaching, soil structure/chemistry /biology

Analysis:
sustainability, impact on food production, economy

VCU trials in cereals

Testing and evaluating cultivars
Norwegian and European

Comparison with approved varieties

Registration of new cultivars on the Norwegian variety list
3 years

	2022	
	Fields	Cultivars
Barley	14	25
Oat	10	20
Spring wheat	8	21
Winter wheat	8	20

Picture; C. Grieu

Challenges

Placing, size and number of trials
Cooperation with NLR (Agricultural Extension Services) and other NIBIO stations

Length of growing season and weather
Sowing and harvesting in bad conditions

Variations in soil types, micro-climate, disease pressure...

Regulations for import of seeds
GMO-certificates, quarantine pests

Strict regulations for testing chemical and biological pesticides
Less active substances allowed in Norway than EU

Costs and competencies
Generation shift

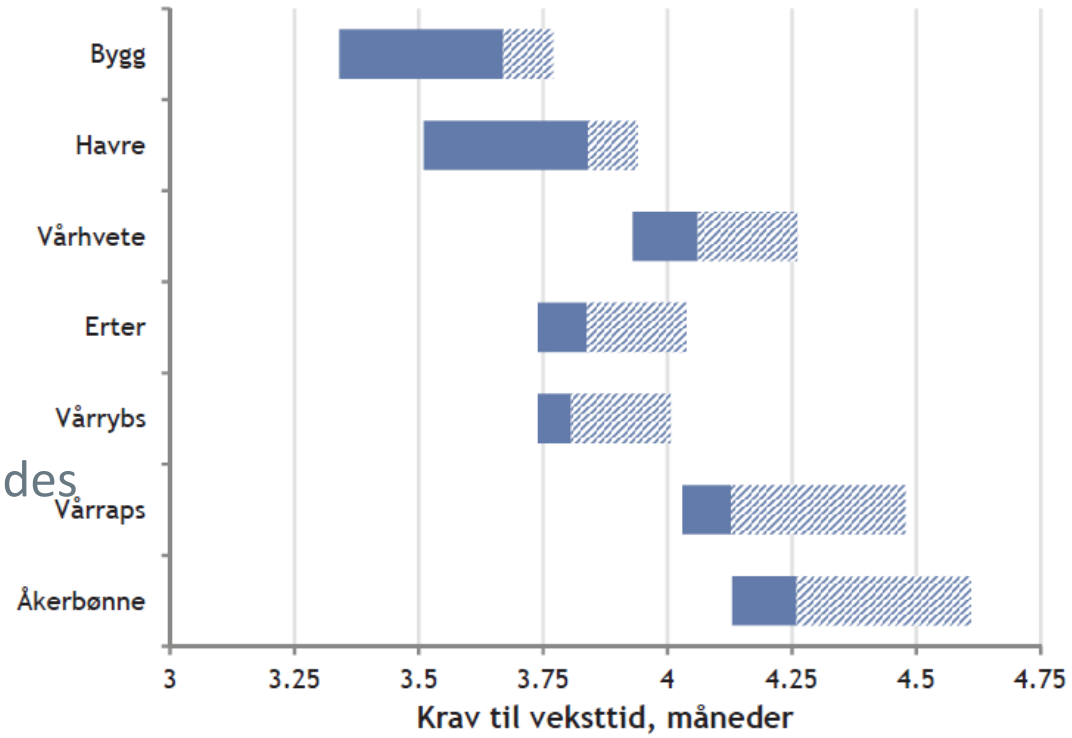

Figure from Abrahamsen et al. (2019)

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Shared challenges / limitations?

What can we learn from each others?

New methodologies to use our resources better?

Integration of new technologies?

...

Thank you !

Picture: C. Grieu

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