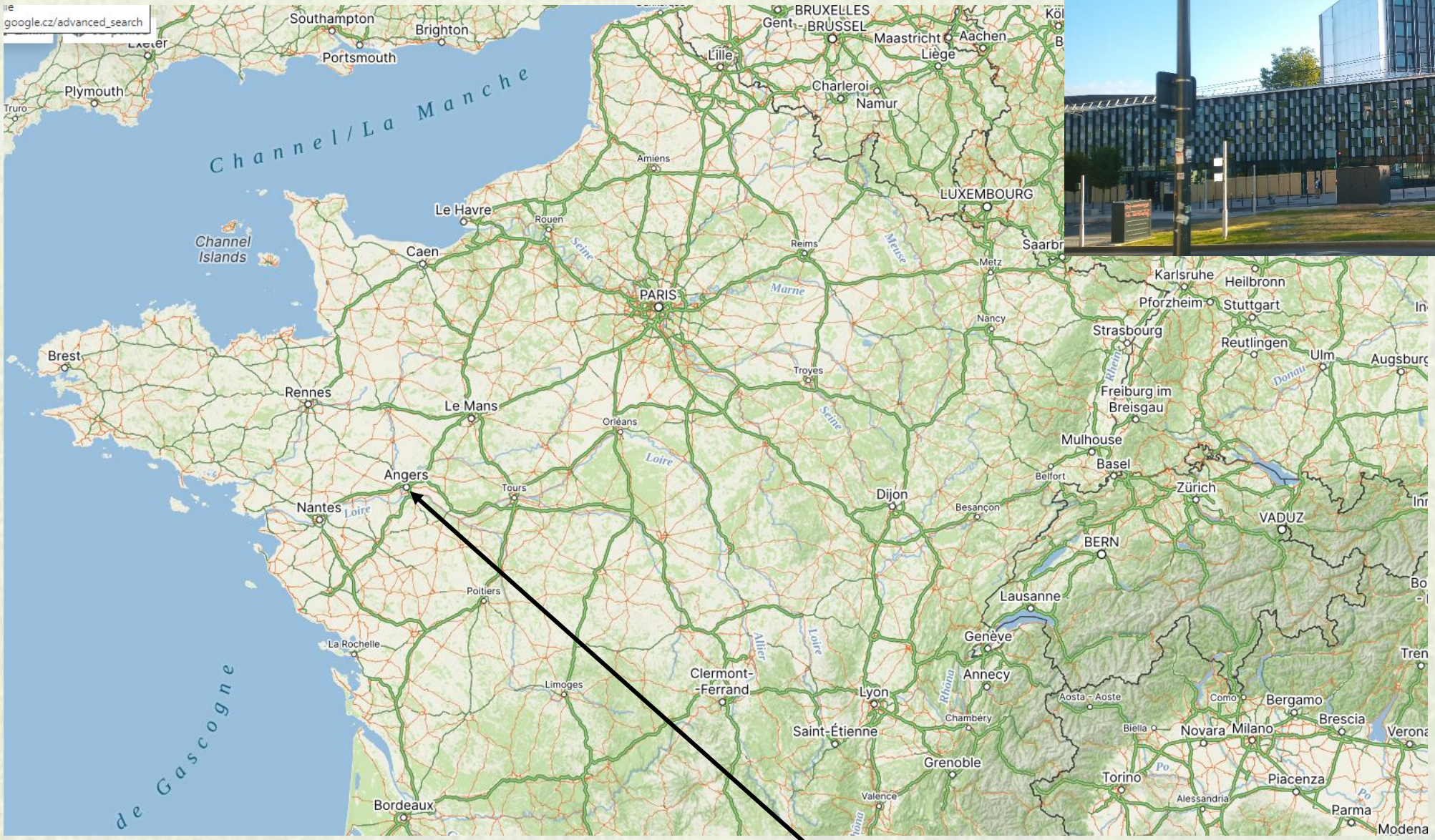
11 International Herbage Seed Conference

11th INTERNATIONAL
HERBAGE SEED GROUP
CONFERENCE

11-18 JUNE 2023
ANGERS CONGRESS CENTRE
LOIRE VALLEY • FRANCE

11–14.6.2023 Angers, Francie

Nížina Loiry a Maine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hotel mercure

Angers

Hlavní témata:

- Adaptace osivářství pícnin na změnu klimatu
- Alternativy k pesticidnímu ošetřování pro ekologické i konvenční zemědělství
- Optimalizace sklizně a posklizňové úpravy
- Jak zlepšit konkurenceschopnost semenářství pícnin s ohledem na růst cen vstupů

French seed production for all species

Main countries	Area under seed production excluding vegetables (ha) - 2021
FRANCE	377 790
ITALY	205 450
GERMANY	195 030
SPAIN	182 790
POLAND	172 740
DENMARK	164 215

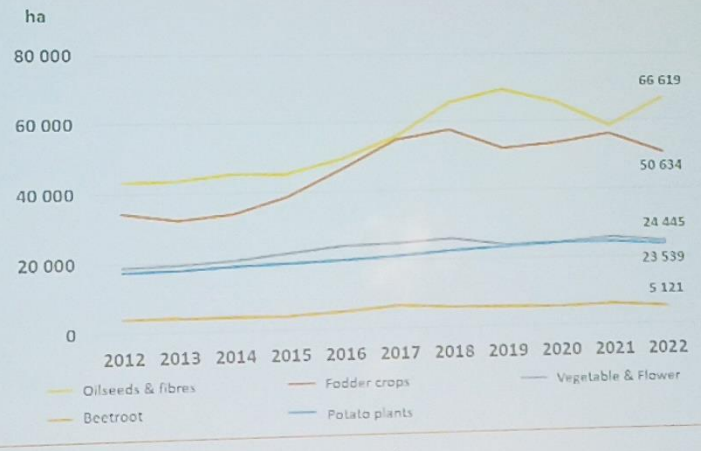
Total surface in EU (2021):

2 101 605 ha (+0,6%)

France is the first producer in the EU

=> 18 % of the European area

France - Seed production area



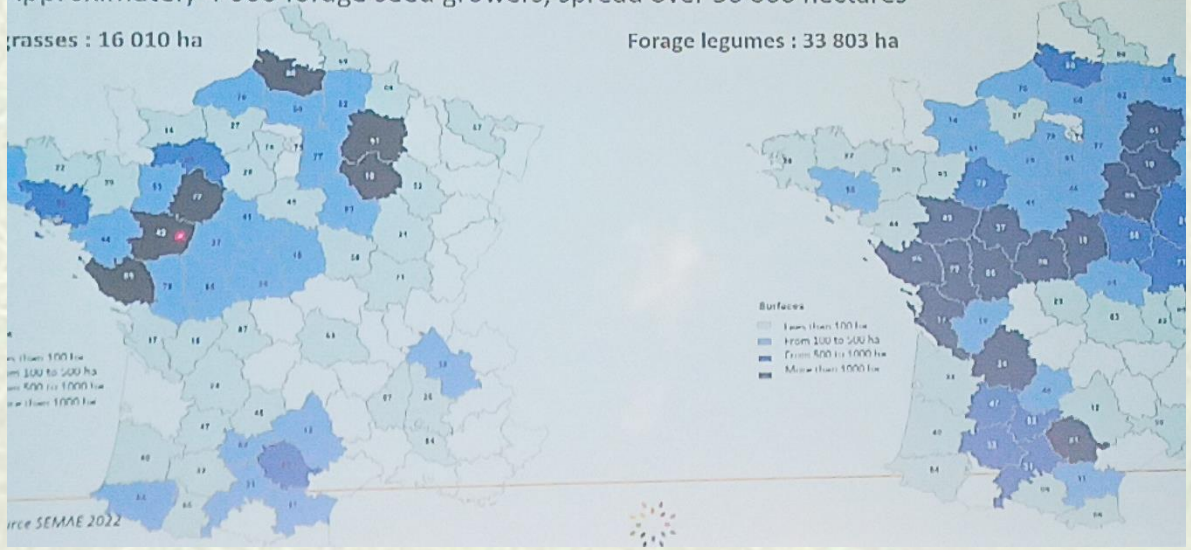
Source SEMAE 2022

Farmer seed growers

Approximately 4 000 forage seed growers, spread over 50 000 hectares

grasses : 16 010 ha

Forage legumes : 33 803 ha

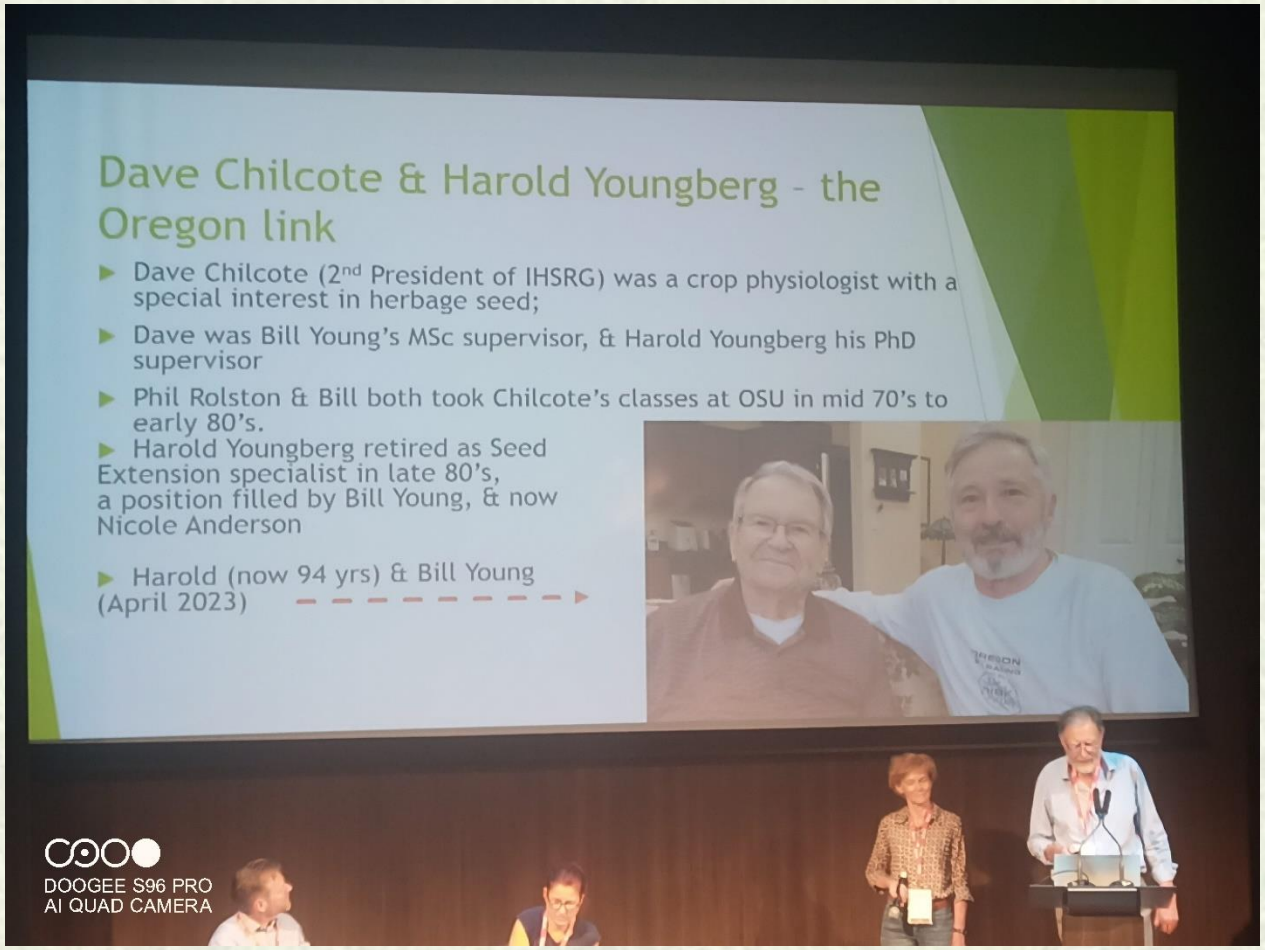


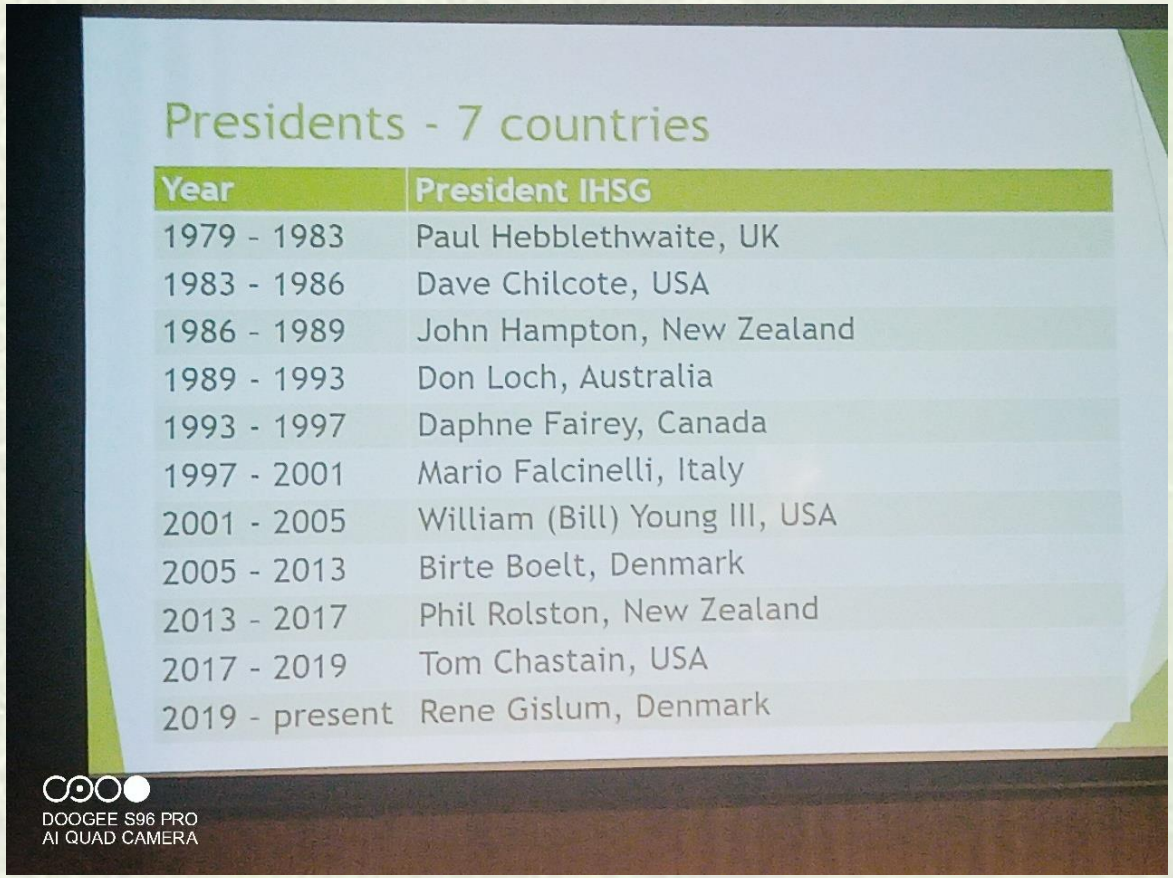
rce SEMAE 2022

semae

Toutes les semences pour demain

Z historie IHSG.....





FNAMS

Jílek mnohokvětý italský setý podsevem do pohanky (vlevo) **nebo inkarnátu** (vpravo)

Výsevek jílku 10 kg/ha

Pokus s ochranou kostřavy rákosovité proti plevelům
(rotační plečka)

Pokus s ochranou srhy laločnaté proti plevelům
(Kerb Flo 0,6 l/ha + 3 x vláčení)

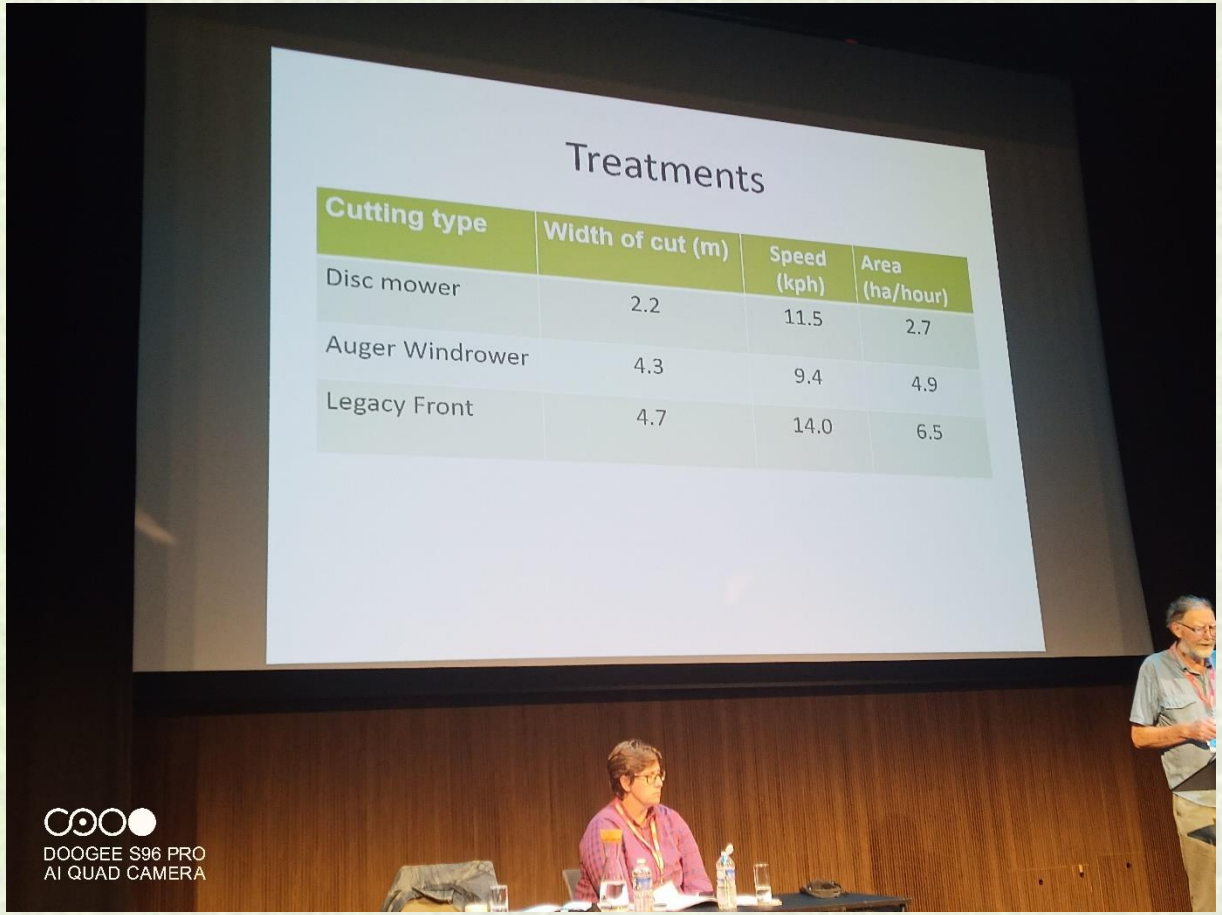
Pokusy s ochranou jílku vytrvalého proti černé rzivosti

FNAMS

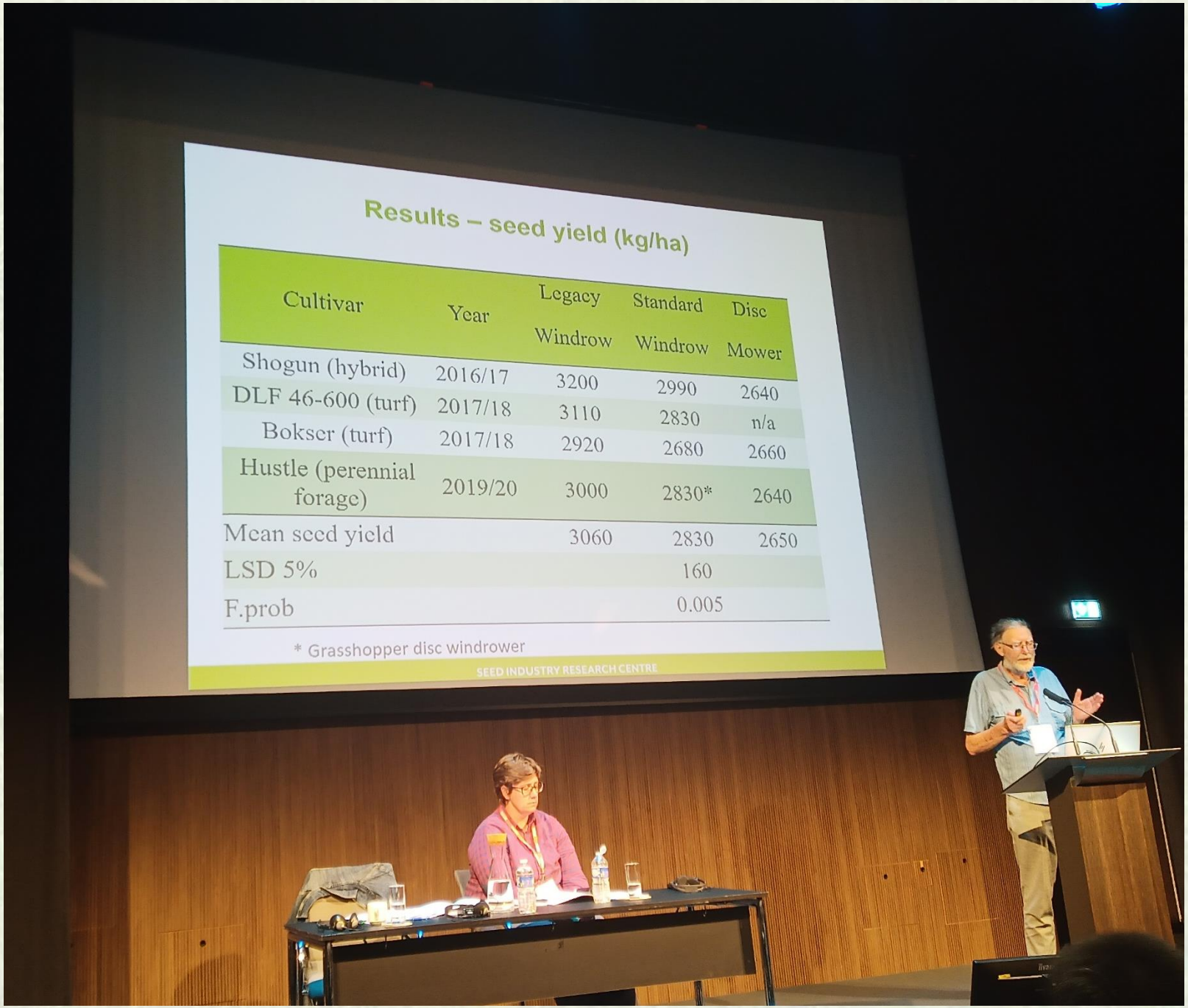
Pro ošetřování pokusů se používá i robot

Referát o pokusech s řádkováním trav

(Dr. Phil Rolston, Nový Zéland)



Cutting type	Width of cut (m)	Speed (kph)	Area (ha/hour)
Disc mower	2.2	11.5	2.7
Auger Windrower	4.3	9.4	4.9
Legacy Front	4.7	14.0	6.5


Results – seed yield (kg/ha)
Cultivar | Year | Legacy Windrow | Standard Windrow | Disc Mower
Shogun (hybrid) | 2016/17 | 3200 | 2990 | 2640
DLF 46-600 (turf) | 2017/18 | 3110 | 2830 | n/a
Bokser (turf) | 2017/18 | 2920 | 2680 | 2660
Hustle (perennial forage) | 2019/20 | 3000 | 2830* | 2640
Mean seed yield | 3060 | 2830 | 2650
LSD 5% | 160
F.prob | 0.005
* Grasshopper disc windrower
SEED INDUSTRY RESEARCH CENTRE

Farma **Les Petites Braudières -**
La Salle-de-Vihiers

Celková výměra	78 ha
- srha na semeno	21 ha
- obiloviny	18 ha
- lískové sady	38 ha

Srha laločnatá cv. Galibier

- založení – podzimní výsev podsevem do pšenice nebo ječmene
- Závlaha
- 160 kg N/ha
- 2 aplikace fungicidů
- průměrný výnos 980 kg/ha

Les Petites Braudières

DLF – Výzkumná a šlechtitelská stanice Brissac

Zámky na Loiře - Brissac

Využití dronů pro snímkování porostů a využití NNI pro stanocení dávek dusíku

CURRENT N APPLICATION SCHEME IN DENMARK

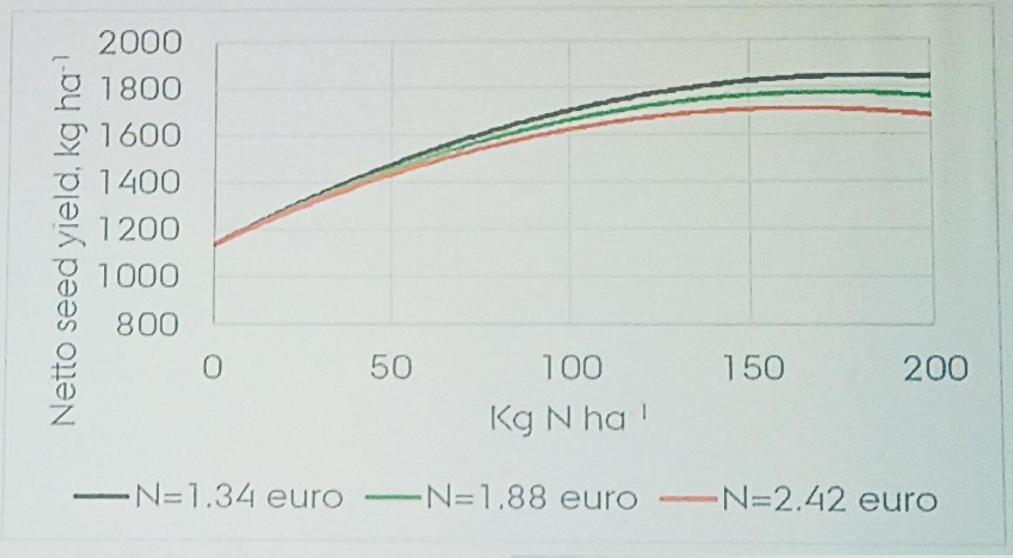
Nitrogen quota for each specie:

Perennial ryegrass - 170 kg ha^{-1}

Red fescue - 150 kg ha^{-1}

Tall fescue - 200 kg ha^{-1}

Seed growers seem to be happy with the current N quota, and this will not encourage them to test/gamble with new methods.



- Focus on environmental risks
- As part of the Farm to Fork strategy – one of the central pillars of the Eur
  EU Commission aims to see a reduction in nutrient losses of at least 50%
  to lead to a reduction in fertiliser use of at least 20%.

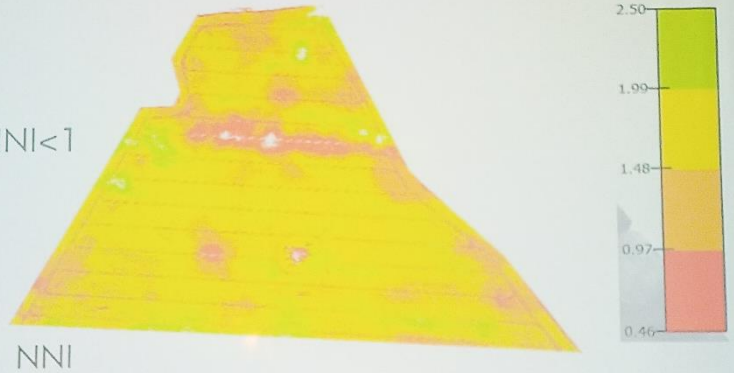
AARHUS UNIVERSITY

gudp

Frøa

UAV IMAGE FOR N FERTILISATION

NNI:
19 hektar
1.3 hektar with NNI<1



Referát o intenzifikaci produkce jílku mnohokvětého jednoletého
(Dr. Nicole Anderson, Oregon, USA)

Study I - Design and Treatments

Plots were arranged in a randomized complete block with a split plot arrangement and four replications.

Defoliation (Main Plots)

Control (no mowing)

Single cutting (BBCH 31)

Triple cutting (BBCH 31 + 2x @ BBCH 32)

TE Plant Growth Regulator (Subplots)

Control (no PGR)

200 g TE ha^{-1} @ BBCH 32

400 g TE ha^{-1} @ BBCH 32

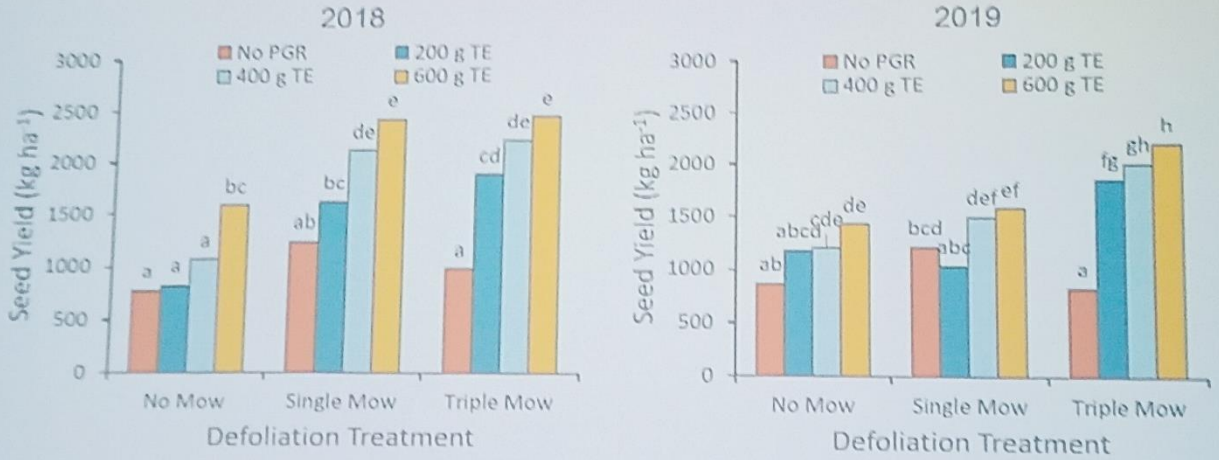
600 ai TE ha^{-1} @ BBCH 32

Spring defoliation of annu
(NP Anderson pho

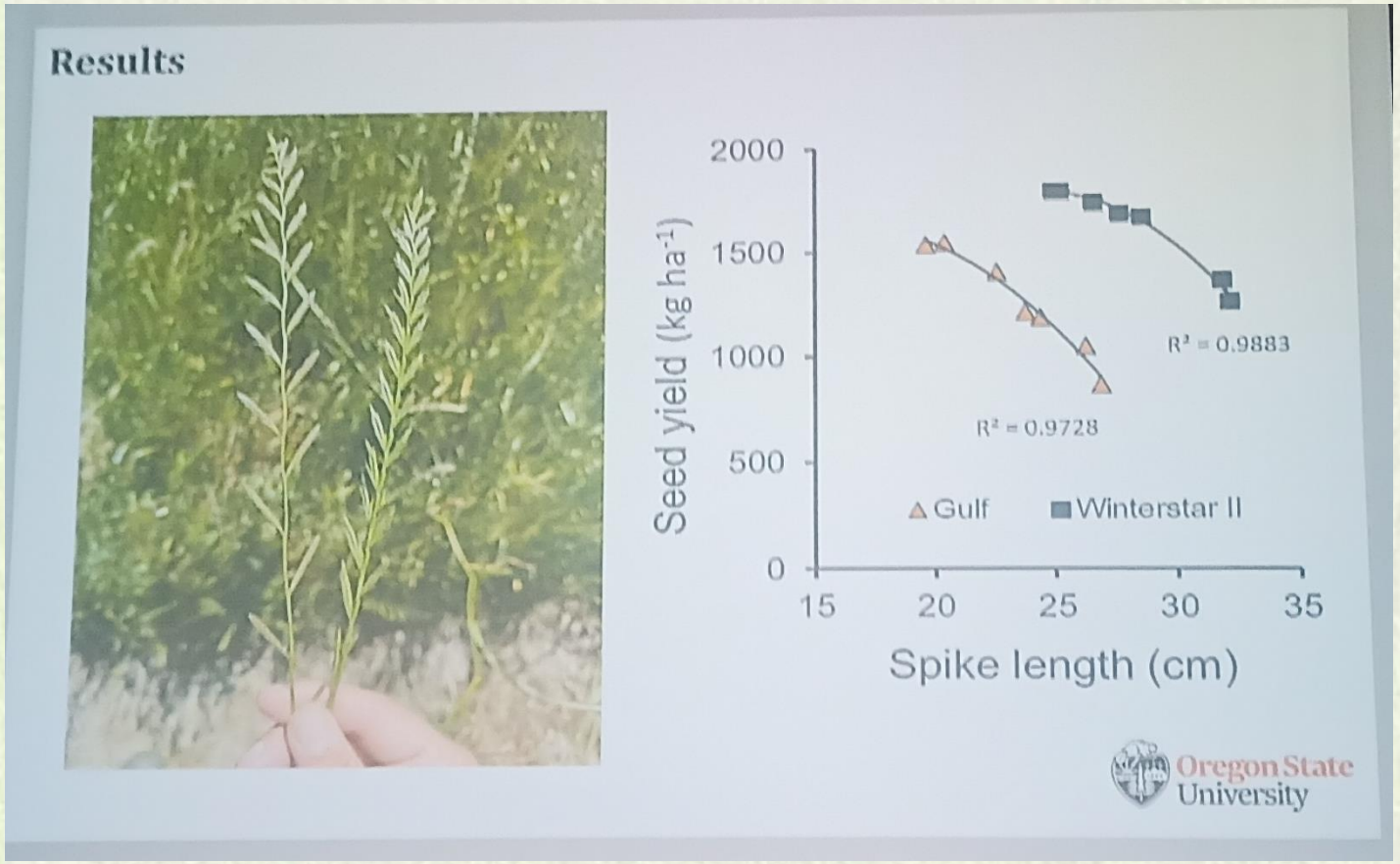
Hnojení 145 kg N/ha

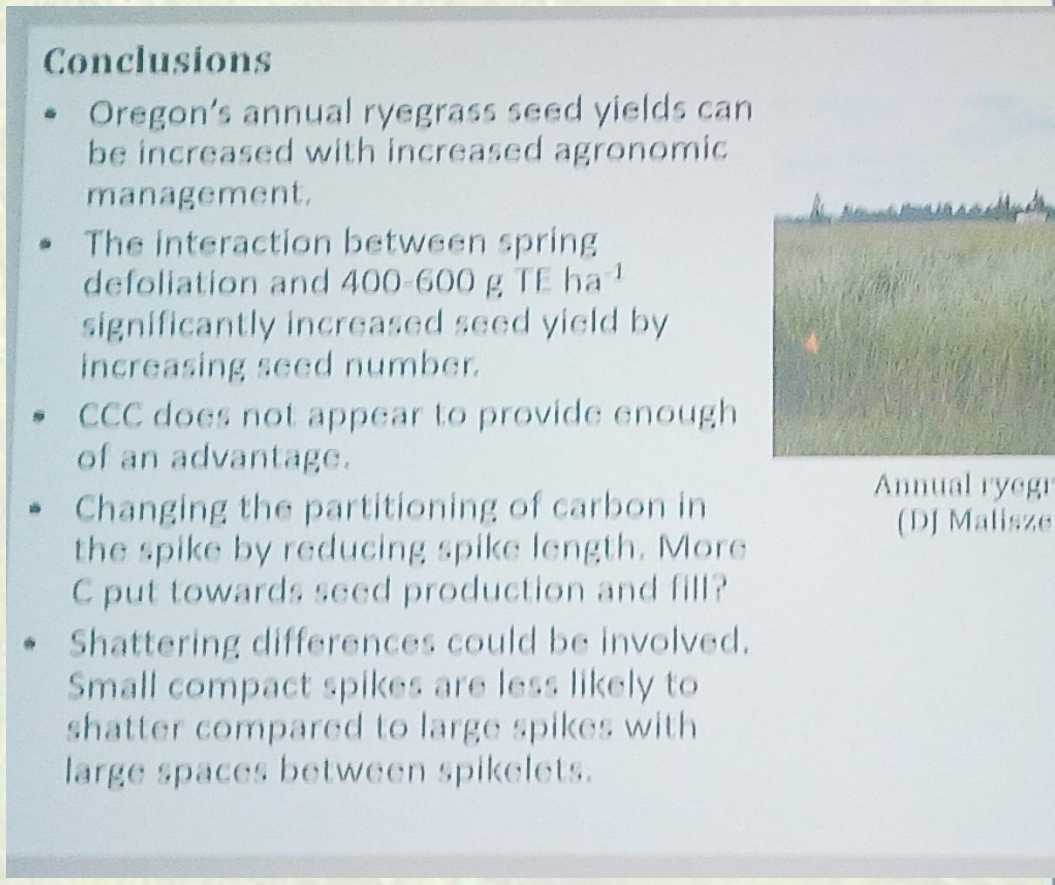
Results – Seed Yield

Significant seed yield interactions between TE + defoliation in both 2018 (P=0.0497) and 2019 (P=0.0002).



Referát o intenzifikaci produkce jílku mnohokvětého jednoletého
(Dr. Nicole Anderson, Oregon, USA)





Alternative weed control in perennial rye-grass seed crop

FNAMS
French Seed Growers' Association

Introduction

In seed grass french production, the certification standards are increasingly difficult to reach in view of the growing difficulties of weeding (few herbicides available, resistant weeds...). The example of perennial rye-grass seed crop is developed here, a species for which there are few effective chemical solutions against black grass (*Alopecurus myosuroides*), but also against some dicotyledons. For this culture carried out at low inter-rows, mechanical weeding such as hoeing is not easy to set up. This study aims to look at alternative solutions.

Material and methods

Trials were set up for two years (2020/2021 and 2021/2022) on a single site in Saint-Pouange (France), included 6 modalities without repetition, with plots of approximately 300m². Two first modalities concerned undersowing in a spring cover crop: pea or buckwheat. The two others are sowed early in bare soil in summer in association with a no frost-resistant plant: mustard (year 1), fenugreek (year 2) and foxtail millet (*Setaria italica*) (both year). These four modalities were coupled with passages of weeder harrow. The last two modalities were sowed in bare soil at the end of summer, one will be managed only with a camera guided hoe and the other with chemical herbicides.

Table I - Main dates for the two years of trial

Modalities	Pea	Buckwheat	Mustard	Fenugreek	Foxtail millet	Mechanical	Chemical
Sowing	March: Peas 300kg/ha Rye-grass 13kg/ha	May or June: Buckwheat 50kg/ha Rye-grass 13kg/ha	July: Mustard 7,5kg/ha, Fenugreek 15kg/ha, Foxtail millet 8kg/ha - Rye-grass 13kg/ha			September: Rye-grass 13kg/ha	
Cover crop harvest	July: peas 15-20q/ha	August 21 or October 22: buckwheat 9q/ha					
Chemical weeding							Autumn (graminicides) and in Spring (broadleaf)
Mechanical weeding	October: one weeder harrow passage March 22: one weeder harrow passage			March 22: one weeder harrow passage		March one hoeing	


Ryegrass under peas in May


Ryegrass under buckwheat in October


Ryegrass combined with mustard in November

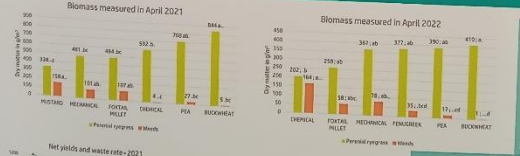

Ryegrass combined with fenugreek in November

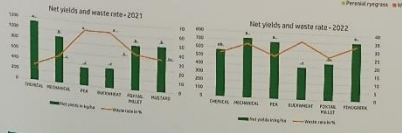

Ryegrass combined with foxtail millet in September


Ryegrass before the hoeing in March


Ryegrass sown in bare soil

Results





Certified perennial ryegrass seed standards

Minimum specific purity 96% and maximum rate of seeds of other plants 1.5%, including a maximum of 0.5% quitch (*Elymus repens*) and 0.3% black-grass.

		Specific purity	Other seeds	Black grass	Quitch	Respect of the standards
Year in 2021	CHEMICAL	99.7	0.2	0.2	0	YES
	MECHANICAL	96.5	3.2	3.19	0	NO
	PEA	98.7	0.2	0.2	0	YES
	BUCKWHEAT	99	0.3	0.3	0	YES
	FOXTAIL MILLET	95.6	2.8	3.75	0	NO
	MUSTARD	89.6	10.1	10	0	NO
Year in 2022	CHEMICAL	93.1	6.4	6.2	0	NO
	MECHANICAL	96.4	2.3	2.2	0	NO
	PEA	97.6	2.1	0.1	0	NO
	BUCKWHEAT	98.2	1.3	0.4	0	NO
	FOXTAIL MILLET	98	1.6	1.3	0	NO
	FENUGREEK	96.8	2.7	2.4	trace	NO

Conclusion

Mechanical weeding is really difficult to implement: Weeder harrow in post-emergence is not efficient enough, but allows to remove crop residues (pea, buckwheat) / Camera guided hoe has difficulties to find its way at a narrow spacing (12,5cm) in March (ryegrass covering the inter-rows) and it is very complicated to may a passage in autumn between the stage of the crop (4 tillers-minimum) and the climate. Associated crops had a limited effect on weeds, as well as establishment difficulties. The under cover method allows a significant limitation of weeds, in particular black grass, but the yield of ryegrass seems to be strongly impacted by this pratical, especially under cover of buckwheat.

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Project financed by
semae

Evaluation of pre-harvest desiccation strategies in clover seed production

NIBIO
NORWEGIAN INSTITUTE OF BIOECONOMY RESEARCH

Lars T. Havstad, NIBIO - Norwegian Institute for Bioeconomy Research
Grimstad, Norway

Background

- Desiccation with diquat about one week before seed harvest has up to now been the common practice in Norwegian clover seed production. However, after withdrawal of diquat in 2020, clover seed growers no longer have any desiccators available to dry down their crops before harvest.
- Several potential desiccants and herbicides are available on the international market. However, none of these products have been tested for use in clover seed production.
- Swathing is another alternative to dry the clover crop before seed harvest. However, due to a low swathing height (usually less than 10 cm), the windrows are left in close contact with the soil. This usually delays drying, especially if the windrows are thick and compact. While the method is widely used in other European countries, many Norwegian seed growers consider swathing to be an uncertain method because of unstable weather conditions during seed harvest. A focus on more open and less compact windrows could nevertheless be useful to reduce the time needed from swathing to seed harvest

Objective:

- The objective of this study was to find alternative desiccators to diquat in white and red clover seed crops. In red clover, an additional aim was to examine if an improved swathing technique could be an alternative strategy to dry down the crop before seed harvest.
- Our hypothesis was that swathing and/or desiccation with one or several of the tested chemicals would be an adequate substitution for diquat in clover seed production.

Materials and methods

- In 2019 and 2020, six field trials in red clover and two field trials in white clover was carried out to evaluate various alternative chemical products at different rates and at two different spraying dates, either early at 50% mature heads and / or late at 65% mature heads, i.e. about 14 and / or 7 days before seed harvesting.
- In addition, swathing was examined as an alternative to desiccation in two red clover trials in 2020.
- Products included in the study, either for one or two years, was Spotlight Plus (carfentrazonethyl), Beloukha (pelargonic acid), Glypper (glyphosate), Gozai (Pyraflufen-ethyl), Harmonix LeafActive (acetic acid), Harmonix FoliaPlus (pelargonic acid), Flurostar (fluroxypyr) and Saltex (sodium chloride) and liquid fertilizers (e.g. urea). More details about products and spraying dates/rates in the 2020-trials are shown in Table 1.


Photo 1. Swathing of red clover seed crops. Photo Ingvild Evju.

Results and discussion

Swathing was the most efficient method to dry red clover seed crops before harvest (Table 1).

Despite none of the tested chemical products considered being superior to diquat, the most promising overall alternative desiccants was the two Harmonix-products, either FoliaPlus (T3) and LeafActive (T2) in red clover or FoliaPlus in white clover, that after an early and late spraying visually wilted the plants most in the experiments in 2020 (photo 2).

Although normally less effective than the two Harmonix-products, also Beloukha alone, especially when sprayed in two rounds (early and late, T5), showed an acceptable desiccation effect.

Another promising strategy was the combination of an early spraying with Glypper (glyphosate) followed by Beloukha a week later (T10). However, as the glyphosate spraying affected germination negatively in some of the trials, the method seems too uncertain to recommend.

None of the other products (Gozai, Spotlight Plus, urea, Flurostar, vinegar or Saltex) desiccated the plants sufficient to be consider for use in clover seed production.

Photo 2. Aerial photo of a white clover trial (Gvarv, South Norway), on 12 August 2020 (two days before seed harvest). Numbers refer to the treatments in Table 1. Photo: Knut H. Solhaug

Table 1. Effect of various desiccation treatments on seed crop colour shortly before seed harvest and water content (%) in uncleaned seed just after seed harvest both in red clover and white clover trials in 2020 (mean of two trials in both species).

	Product application rate (L ha⁻¹)		Red clover		White clover	
	10-14 days before seed harvest	5-7 days before seed harvest	Seed crop colour (1-9, 9 is most brown / wilted) at harvest	Water content (%) in uncleaned seed	Seed crop colour (1-9, 9 is most brown/ wilted) at harvest	Water content (%) in uncleaned seed
1. Spotlight Plus (60 g L⁻¹ carfentrazone-ethyl)	1	0	3.5	17.5	3.6	33.0
2. Harmonix Leaf Active (240 g/L acetic acid)	250	250	8.2	14	4.6	24.7
3. Harmonix FoliaPlus (250 g L⁻¹ pelargonic acid)	120	120	8.7	12	6.1	15.0
4. Beloukha (680 g L⁻¹ pelargonic acid)	0	16	5.8	16	2.7	34.5
5. Beloukha (680 g L⁻¹ pelargonic acid)	16	16	6.5	15	3.8	30.7
6. Vinegar (8,75% acetic acid)	500	500	5.6	14.5	3.3	35.7
7. Vinegar (8,75% acetic acid)	0	500	4.3	16	2.8	46.0
8. Glypper (360 g L⁻¹ glyphosate)	2	0	4.4	14	3.0	27.7
9. Spotlight (+ Mero oil¹) + Beloukha	1	16	6.3	15	5.0	25.7
10. Glypper (glyphosate) + Beloukha	2	16	6.8	12	5.7	20.2
11. Flurostar 200 (200 g L⁻¹ fluroksypyr)	2	0	2.7	21.5	3.1	50.3
12. Saltex (22.5 % NaCl)	800	800	5.8	15.5	2.9	28.3
13. Saltex (22.5 % NaCl)	0	800	5.1	16	2.6	31.3
14. Swathing 5-7 days before seed harvest	0	0	7.8	6	-	-
15. No desiccation or swathing (control)	0	0	3	18	1.0	48.3
P-value			<.0001	<1	0.0001	<.0001
LSD (P ≤ 0.05)			1.5	4.8	1.0	7.3


Photo 3. White clover plot sprayed six days earlier with Harmonix FoliaPlus (T3) (left). Untreated plot (T 15) to the right. Photo by Lars T. Havstad.

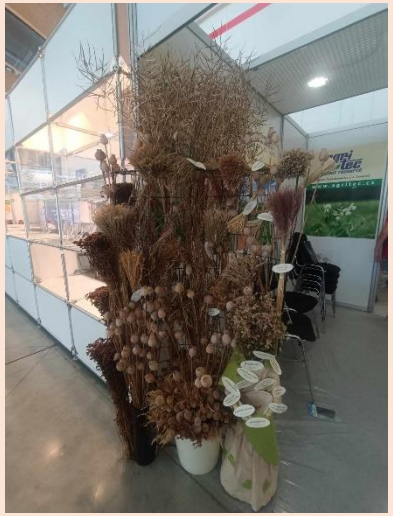
Conclusions

- All in all, swathing before harvest, using finger bar cutters, seems to be the most effective drying method under favourable weather conditions.
- While none of the tested chemicals were superior to diquat, the most promising alternatives were Harmonix FoliaPlus or Harmonix LeafActive in red clover and Harmonix FoliaPlus in white clover. Although usually less effective than these products, Beloukha also had an acceptable effect, especially when sprayed both early and late.
- The early spraying of Glypper followed by Beloukha after one week also resulted in acceptable desiccation, but this treatment cannot be recommended due to the risk for reduced germination capacity of the clover seed.
- No other product desiccated the crops sufficiently to be consider for use in clover seed production.


Děkuji za pozornost

Polní den Výzkumné stanice travinářské v Zubří
Červen 2024

Výstava Země živitelka 22.-27.8.2024
Pavilon T1



OSEVA vývoj a výzkum s.r.o.
a OSEVA PRO s.r.o., Výzkumná stanice travinářská Zubří

Vás zvou na dny otevřených dveří „*Kouzelný svět trav*“.

Pátek 13. 9. 2024 8^{00} – 18^{00} hod.
Sobota 14. 9. 2024 8^{00} – 12^{00} hod.

Areál Výzkumné stanice travinářské v Zubří (u rybníků)

Tým pracovníků pro Vás v genofondové zahradě připravil pestrý program:

Představení trav z našich zahrad, luk a polí
Ukázka zahradní a maloparcelní techniky
Ochutnávka i prodej Zuberské pohanky
Prodej podzimních rostlin, dekorací a okrasných trav

Výstava kovových plastik Karla Raaba

Prezentace Vysoké školy báňské, Technické univerzity Ostrava:
Výroba peletek z trav a ukázka spalování

Malování

Technika

Ovečky

Vlněná dílnička

Občerstvení zajišťuje:

VSTUP ZDARMA

Více informací na www.oseva-vav.cz.
Organizační garant akce: Martina Cabáková
tel. 739 321 334; e-mail: cabakova@oseva.cz

Akce je pořádaná za podpory MZe v rámci řešení Národního programu konzervace a využívání genetických zdrojů rostlin a agro-biodiversity č. 51834/2017-MZE-17253/6.2.6