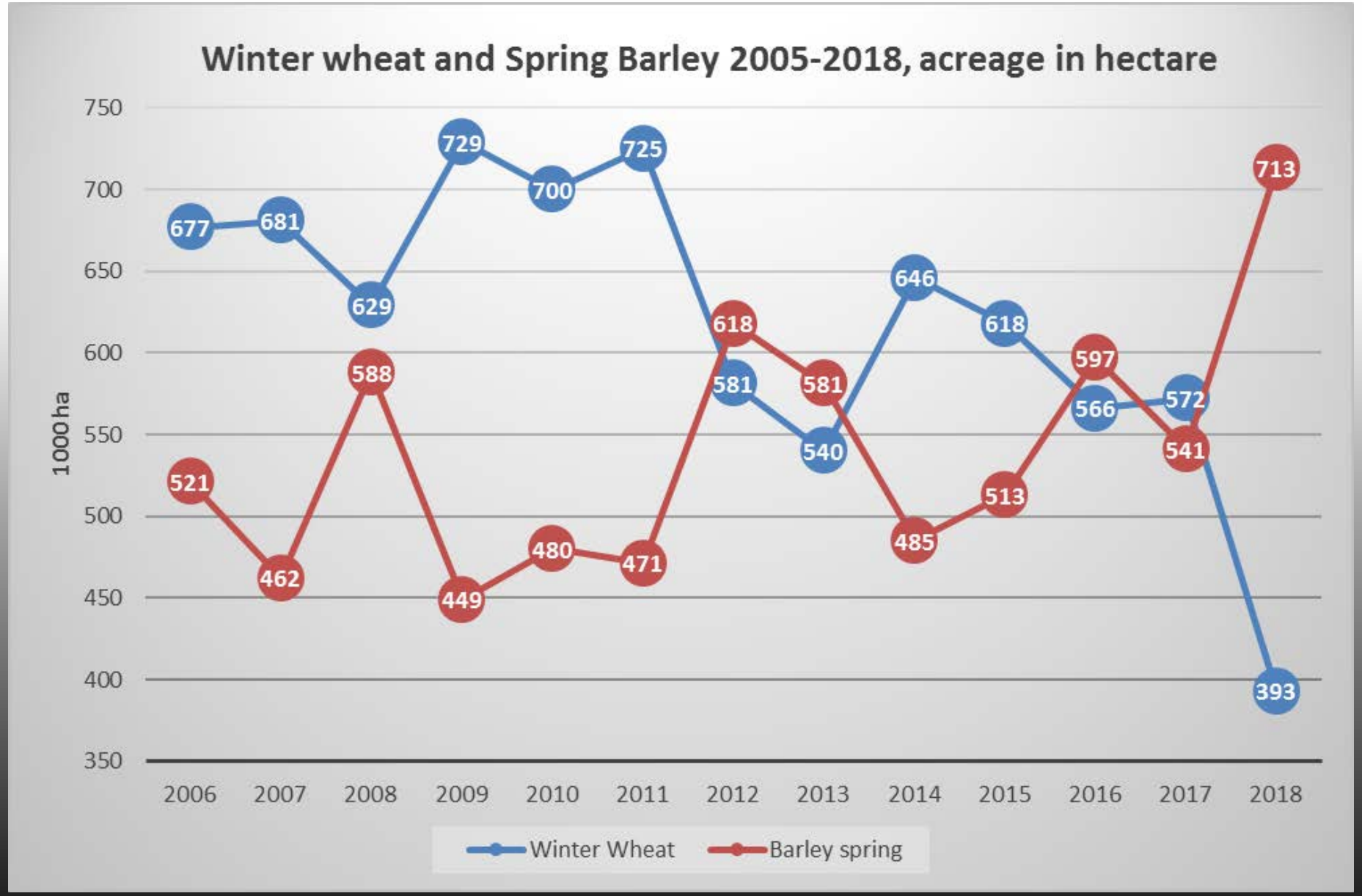
DanSeed og Dansk cerealienetværks årsmøde - Marts 2019



DANSKE SORTSEJERE

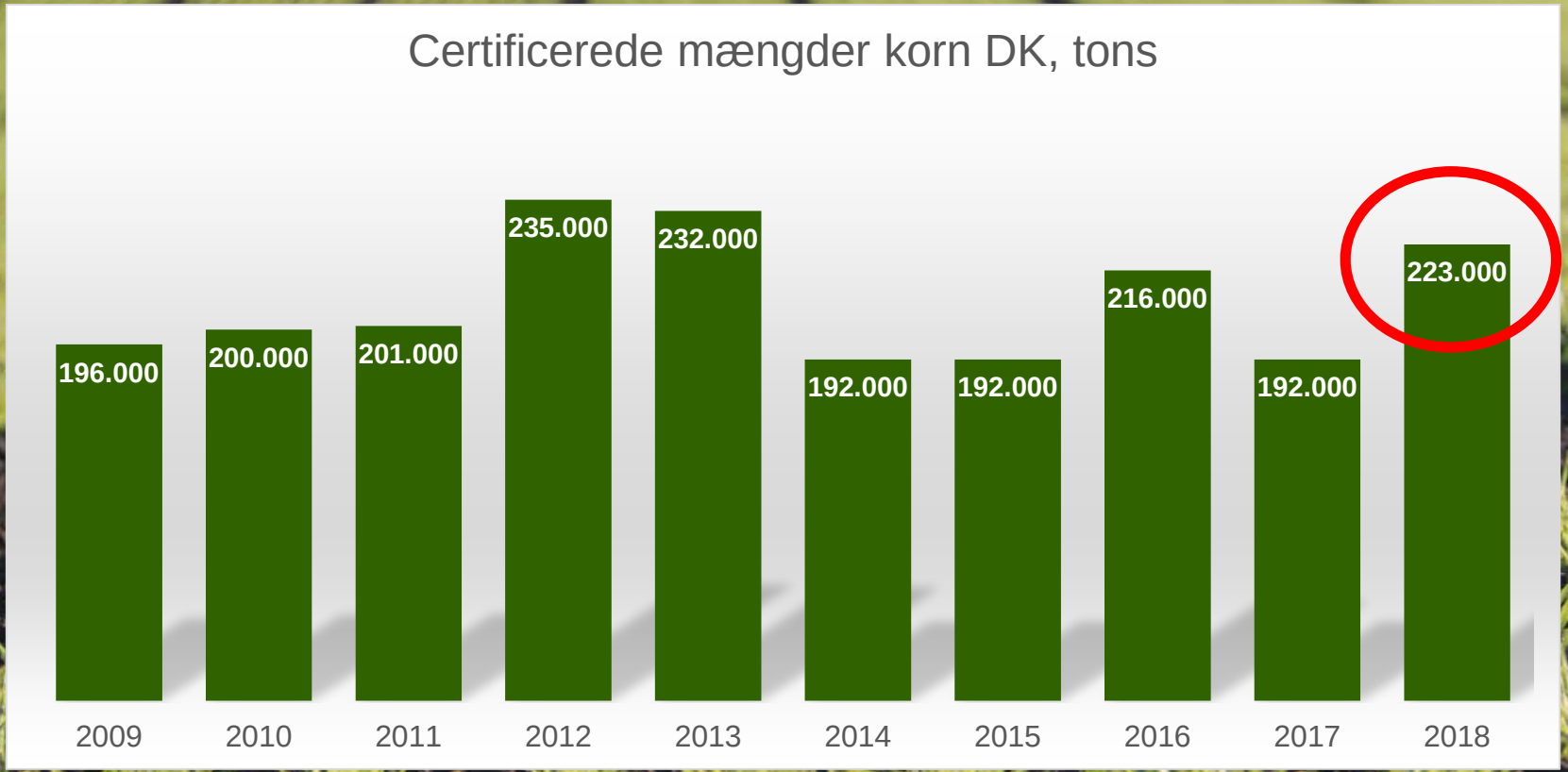
Variety Denmark

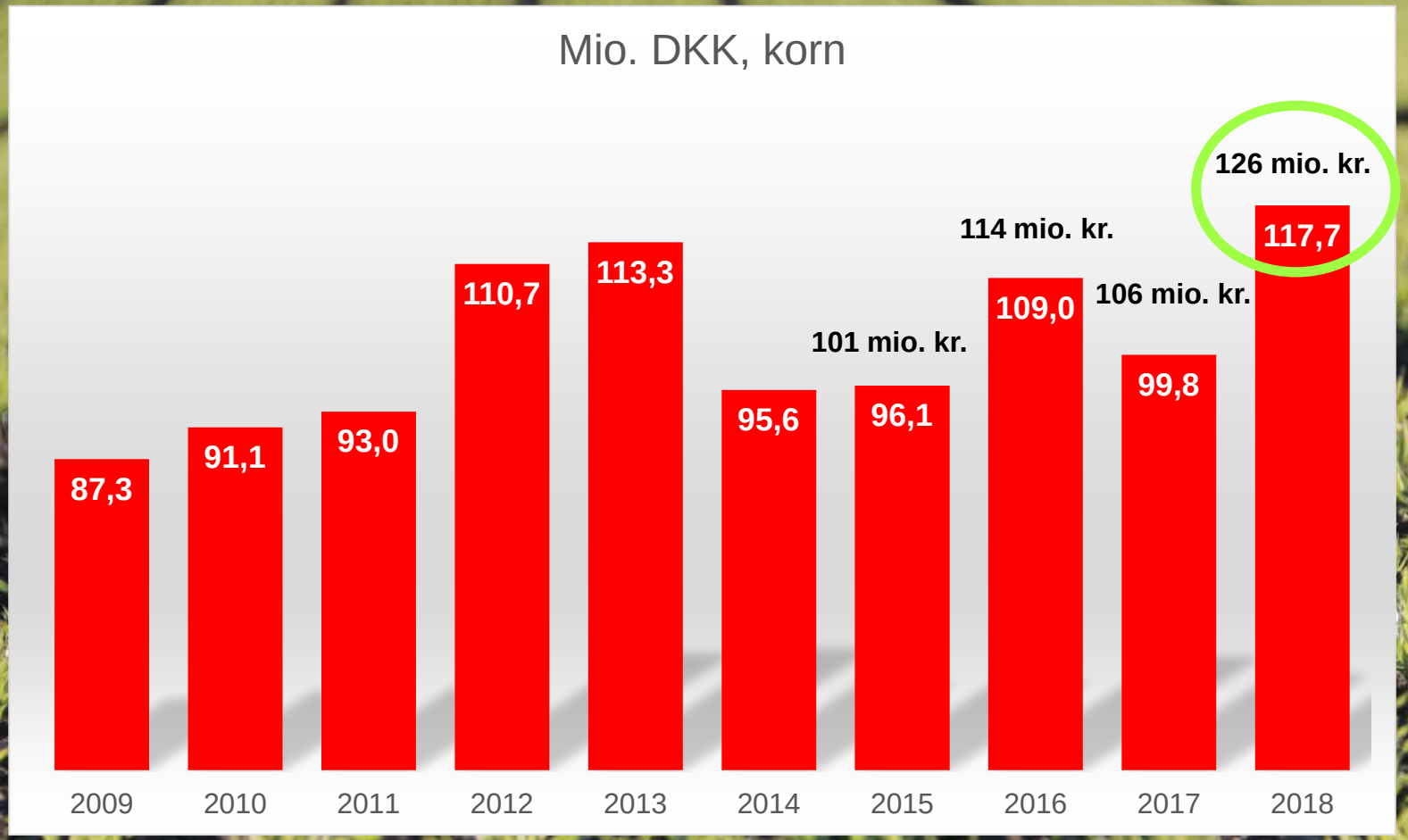
Certificerede mængder efterår 2017

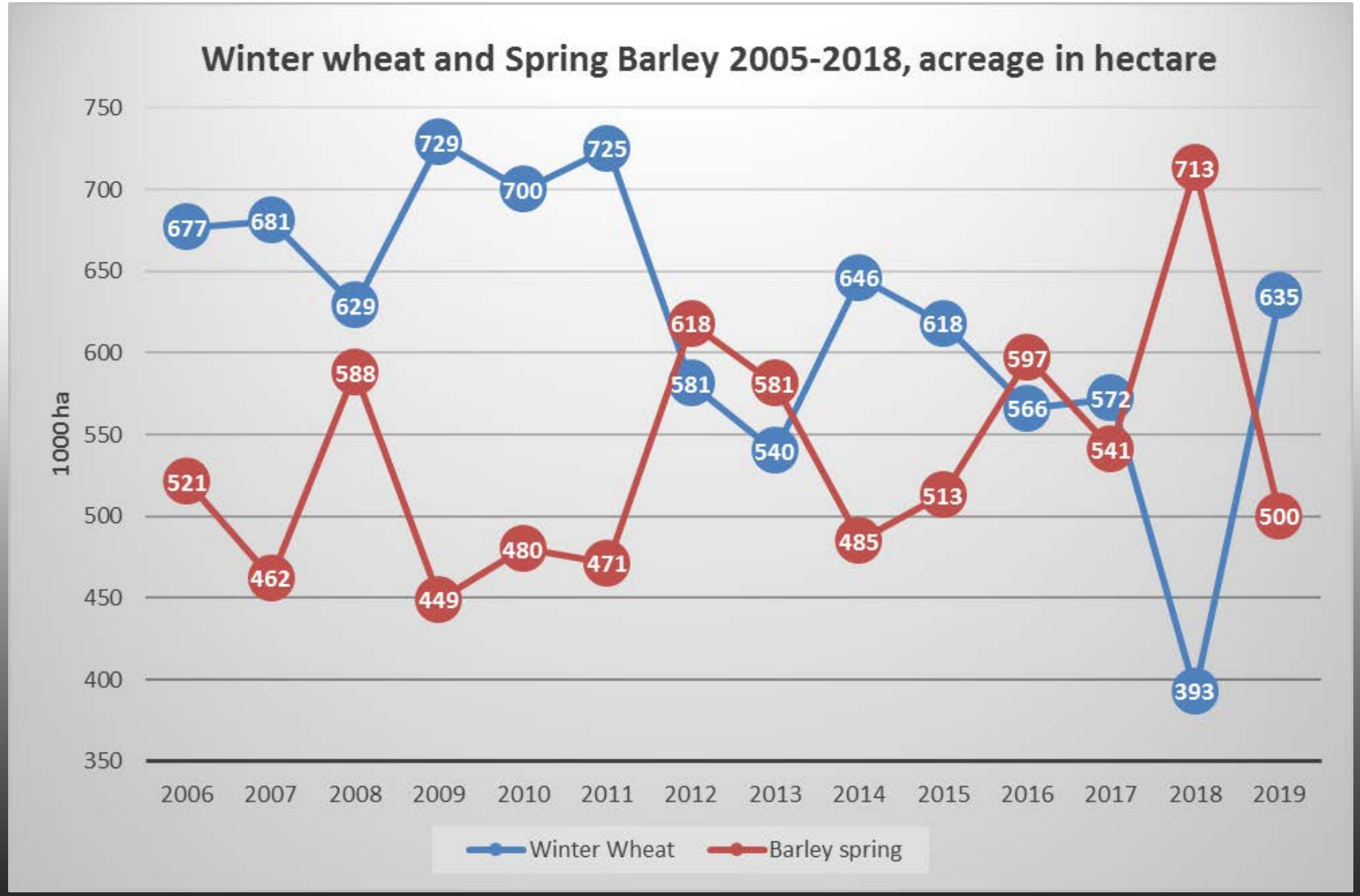
	Tons	ifht. 2016
Vinterhvede	75.602	93%
Vinterbyg	19.752	110%
Rug	13.804	96%

Certificerede mængder forår 2018

	Tons	ifht. 2017
Vårbyg	111.963	133%
Havre	12.264	135%
Vårhvede	3.721	134%


Certificerede mængder korn DK, tons
196.000
200.000
201.000
235.000
232.000
192.000
192.000
216.000
192.000
223.000
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018


Mio. DKK, korn
87,3
91,1
93,0
110,7
113,3
95,6
96,1
101 mio. kr.
109,0
114 mio. kr.
99,8
106 mio. kr.
117,7
126 mio. kr.
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018


Winter wheat and Spring Barley 2005-2018, acreage in hectare
1000 ha
750
700
650
600
550
500
450
400
350
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
677
681
629
729
700
725
581
540
646
618
566
572
393
635
521
462
588
449
480
471
618
581
485
513
597
541
713
500
Winter Wheat
Barley spring

TystofteFonden

DANSKE SORTSEJERE

Foreløbig oversigt over mængder af vintersæd produceret i perioden 01.05. - 31.10.18

	ton	procent
VINTERBYG		
KWS-MERIDIAN	2.455	16 %
HEJMDAL	2.374	16 %
KWS-INFINITY	1.592	11 %
KWS-KOSMOS	[illegible]	10 %
SY GALILEOO	[illegible]	10 %
KWS-ORWELL	1.253	8 %
FRIGG-VIBY	949	6 %
VALERIE	857	6 %
NEPTUN-VIBY	792	5 %
Total	**14.971**	
VINTERHVEDE		
BENCHMARK	16.360	25 %
SHERIFF	13.101	20 %
KALMAR	[illegible]	11 %
TORP	[illegible]	11 %
INFORMER	5.480	8 %
KWS-LILI	4.192	6 %
Total	**65.368**	

Indeks 80

Indeks 75

	ton	procent
VINTERRUG		
KWS-LIVADO	2.491	23 %
KWS-BINNTTO	1.727	16 %
KWS Vinetto	1.298	12 %
SU-PERFORMER	[illegible]	10 %
RG 1124	[illegible]	10 %
KWS SERAFINO	1.031	10 %
DUKATO	617	6 %
KWS-BONO	496	5 %
Total	**10.833**	
TRITICALE		
NEOGEN	700	57 %
CAPPRICIA	268	22 %
Total	**1.230**	
Total visæd	**92.401**	

Indeks 80

Acreage by Crop, 1000 ha

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Cereals							NaturErhverv Enkeltbetaling	NaturErhverv Grundbetaling	NaturErhverv Grundbetaling	LFST Grundbetaling	LFST Grundbetaling	guess
Winter Wheat	629	729	700	725	581	540	646	618	566	572	393	635
Winter Barley	129	144	144	131	102	109	119	119	110	125	83	100
Winter Rye	29	44	52	56	64	87	106	122	100	111	93	110
Winter Triticale	35	45	37	36	22	13	15	13	8	8	5	5
Winter Cereals tot.	822	962	933	948	769	749	886	872	784	816	574	850
Spring Barley	588	449	480	471	618	581	485	513	597	541	713	500
Oat	84	67	57	42	50	56	36	38	53	58	82	50
Spring Wheat	10	10	14	20	30	28	16	15	17	15	33	15
Grain Maize		7	10	10	13	13	10	8	6	5	6	6
Mixed cereals							7	5	6	8	7	7
Spring Cereals tot.	682	533	561	543	711	678	554	579	679	627	841	578
	1,504	1,495	1,494	1,491	1,480	1,427	1,440	1,451	1,463	1,443	1,415	1,428

Raps = 155.000 ha
Majs = 190.000 ha
Hesteb. = 15.000 ha

Plantepas - label til flytning inden for Unionens område

14. December 2019

Bekendtgørelse om sædekorn

Efter lov om handel med frø, såsæd, læggekartofler og planter, jf. lovbekendtgørelse nr. 798 af 11. december 1987, og til gennemførelse af De europæiske Fællesskabers rådsdirektiv af 14. juni 1966 om handel med sædekorn (66/402/EØF), som senest ændret ved kommissionsdirektiv af 15. december 1988 (89/2/EØF), fastsættes efter bemyndigelse:

Kapitel 1

Indledende bestemmelser
Bekendtgørelsens område

§ 1. Denne bekendtgørelse fastsætter betingelserne for produktion og omsætning af korn til såning, i det følgende kaldt sædekorn, af:

1) *Avena sativa* L. alm. havre
2) *Hordeum vulgare* L. alm. byg
3) *Secale cereale* L. alm. rug
4) *Triticum aestivum* L. emend. Fiori et Paoletti alm. hvede
5) *Triticum durum* Desf. durumhvede
6) *Phalaris canariensis* L. canariegræs
7) *Zea mays* L. (partim) majs
8) *X Triticosecale* Wittmack triticale

Stk. 2. En jordbrugers indlevering af sædekorn til en virksomhed til tørring, rensning, bejdsning eller lignende behandling i lønarbejde og virksomhedens tilbagelevering af det behandlede sædekorn er ikke omfattet af denne bekendtgørelse, hvis

1) jordbrugeren på en af Plantedirektoratet godkendt formular skriftligt betinger sig, at det samme parti, som han har indleveret, samt eventuel frarensning heraf, tilbageleveres til ham, og
2) virksomheden
   a) opbevarer den i nr. 1 nævnte erklæring i mindst 2 år og efter anmodning foreviser den for Plantedirektoratet,
   b) under behandlingen og opbevaringen holder partiet, herunder eventuel frarensning, klart adskilt fra andre partier og tydeligt mærket på en sådan måde, at det klart fremgår, hvem partiet tilhører, samt
   c) i de lokaler, hvor sædekornet behandles og opbevares, ikke behandler eller opbevarer andet korn end sædekorn, der i overensstemmelse med foranstående bestemmelser er indleveret til behandling i lønarbejde.

Definitioner

§ 2. I denne bekendtgørelse forstås ved:

1) *F-materiale:* Sædekorn af en forædlet sort, der benyttes af forædleren eller dennes repræsentant til vedligeholdelse af sorten eller til avl af præ-basissæd.
2) *Præ-basissæd:* Sædekorn, som
   a) under ansvar af forædleren eller dennes repræsentant er avlet på F-materiale, der opfylder de i bilag 1 fastsatte betingelser og
   b) er bestemt til avl af basissæd.
3) a) *Basissæd (undtagen hybridsorter af rug):* Sædekorn, som
   I) er avlet på præ-basissæd leveret af forædleren eller dennes repræsentant eller på forædlerens anmodning på F-materi-

Landbrugsmin.
Plantedir. j.nr. 90-210-5

LBEK

Schultz Grafisk A/S 011/11009 26-11 b/land66642

VI. Planteskadegørere

Meldrøjer

1) Planteskadegørere
kun forekomme i

2) Højest tilladte ind
stykker/brudstykker.

a) EU-norm			
i) Alle arter, dog ikke hybridrug, majs og alm. kanariegræs, i 500 g	1	3	3
ii) Hybridrug, i 500 g	1	4 [1)]	
iii) Majs			
(1) Basissæd af indavlede linjer, i 250 g	1		
(2) Basissæd af andre linjer og certificeret sædekorn, i 1 kg	1	3	
iv) Alm kanariegræs, i 200 g	1	3	
b) Dansk norm i 1 kg			
i) Alm. byg, alm. hvede, alm. havre, nøgen havre, triticale, spelt, durumhvede og alm. rug (dog ikke hybridrug)	2	6	6
ii) Hybridrug og blandinger af konventionel alm. rug og hybridrug		9	

[1)] Findes der 5 sklerotier eller fragmenter heraf i 500 g, er normen overholdt, hvis der i en tilsvarende prøve kun findes 4 sklerotier eller fragmenter heraf

Regulated non-quarantine pest Project

An EU funded project for the benefit of the whole EPPO region

RNQP definition | The Project | The methodology | Recommendations

250 RNQP-ere

Final recommendations for RNQP listing, revised thresholds and associated risk management measures can be downloaded there: Download recommendations by sector

The list of pests recommended for listing has also been published in an article of the EPPO Bulletin: https://onlinelibrary.wiley.com/doi/full/10.1111/epp.12500

Legend

- Rec = Recommended for listing as an RNQP
- NRec = Not recommended for listing as an RNQP
- D = Disqualified from RNQP status
- N = No evaluation required

for each pest, justification is available in the summary sheet

Full summary sheets developed during the project are accessible in the following database:

Status	Sector	Pest	Host	Summary sheets
- se	- select -	Search...	Search...	
D	Beet seed sector	None (Annex IB point (2): 'Diseases which reduce the usefulness of the seed')	Beta vulgaris	
Rec	Cereals (including rice) sector	Claviceps purpurea	Avena nuda	
Rec	Cereals (including rice) sector	Claviceps purpurea	Avena sativa	
Rec	Cereals (including rice) sector	Claviceps purpurea	Avena strigosa	
Rec	Cereals (including rice) sector	Claviceps purpurea	Hordeum vulgare	

Measures for seeds of **Hordeum vulgare** to prevent the presence of ***Ustilago nuda***

(a) The seed has been subjected to **field inspection** of a representative sample of the plants in the crop and in its immediate vicinity [by the competent authority] at an appropriate time at which **no symptoms are seen**;

or
(b) On a **representative sample of seed** the set tolerance referred to in Annex III for Ustilago nuda is not exceeded;

or
(c) The seed has been subjected to **treatment** with an approved fungicide known to be effective against Ustilago nuda.

Measures for seeds of Triticum durum and **Triticum aestivum** to prevent the presence of ***Ustilago tritici***

(a) The seed has been subjected to **field inspection** [by the competent authority] of a representative sample of the plants in the crop and in its immediate vicinity at an appropriate time at which **no symptoms of *Ustilago tritici* are seen;**

Or

(b) On a representative **sample of seed** the set tolerance referred to in Annex III for *Ustilago tritici* is not exceeded infected;

Or

(c) The seed has been subjected to **treatment** with an approved fungicide known to be effective against *Ustilago tritici*;


(a)
(b)
(c)
(d)
(e)
(f)

(a) Plants produced in areas known to be free from Ditylenchus gigas;

(b) OR

(b) The crop has been inspected at least once at an appropriate time during the growing season and no symptoms of Ditylenchus gigas have been observed;

OR

(c) No Ditylenchus gigas has been revealed by laboratory tests on a representative sample;

OR

(d) the seeds have been subjected to an appropriate physical or chemical treatment against Ditylenchus gigas and have been found to be free of this pest after laboratory tests on a representative sample.

Danish Preferred

DANISH MALTING BARLEY

Catalogue 2018

www.danishpreferred.com

DanSeed og Dansk cerealienetværks årsmøde - Marts 2019

Danish Preferred

Danish Preferred approved varieties

Oktober 2018

Danish Preferred approved varieties			
Variety	Breeder	Year of approval	Page
Evergreen	Nordic Seed	2017	*
KWS Irina	KWS	2017	*
Odyssey	Limagrain	2017	*
Propino	Syngenta	2017	*
Quench	Syngenta	2017	*
RGT Planet	RAGT	2017	*
Crossway	Nordic Seed	2018	6
Flair	Sejet	2018	7
Laureate	Syngenta	2018	8

VARIETY NAME: LAUREATE

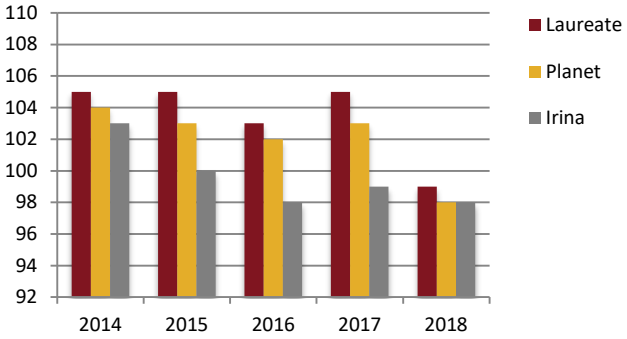
Danish Preferred

GENERAL INFORMATION

Variety:	Laureate, Non GN variety
Type:	Two row spring malting barley
Breeder:	Syngenta, Germany
Representative:	Sejet, Denmark
Distributer:	DLG
Pedigree:	Sanette x Concerto
Status:	1.152 ha multiplication in DK in 2018
Geography:	DK, UK, SE, F, PL, DE, IR and LT

AGRONOMY

Data from Danish Official and National trials.
Relative yield index.



Data from Danish National Trials 2014-2018	Irina/Planet	Laureate
Relative yield %	101	104
Protein %	10,7	10,6
Grading >2,5mm %	97	97
Grading >2,8mm %	86	89
Specific weight (hl/kg)	66,7	66,4
Maturity	02 Aug	02 Aug
Straw length in cm	60	61
Lodging (0-10, 1 is best):	0,6	0,7
Straw breaking (0-10, 1 is best)	3,1	4,1
Mildew (% coverage)	0	0
Barley rust (% coverage)	12	6
Skald (% coverage)	3,4	1,7
Net Blotch (% coverage)	1,3	0,04

www.sortinfo.dk

VLB MICRO MALTING

Stress test crop 2017 at 41%, 43% and 45% steeping degree. Tested variety is compared to the two largest malting barley varieties in Denmark for crop 2017.

	KWS Irina_45	KWS Irina_43	KWS Irina_41	RGT Planet_45	RGT Planet_43	RGT Planet_41	Laureate_45	Laureate_43	Laureate_41
Extract	3	3	3	3	4	4	1	1	3
Friability	3	4	5	2	3	5	2	3	5
Beta-Glucan	2	4	5	2	3	5	2	3	5
Viscosity	2	3	5	1	2	4	1	2	3
FAN	2	2	3	2	2	3	3	3	3
Soluble N	2	2	3	2	2	3	2	2	3
Kolbach	2	3	3	2	2	3	2	2	3
Alpha-Amylase	4	4	4	1	2	3	1	2	3
Beta-Amylase	1	1	2	1	1	1	2	2	2
Limit Dextrinase	1	2	3	1	2	2	2	3	4
Attenuation	1	2	2	1	1	2	1	1	5
Turbidity	1	2	1	3	4	3	2	2	1

Positive:
- Good extract level at all steeping levels
- Good malt modification values

Negative:
- Low attenuation at steeping degree 41%

INDUSTRY MALTING

Comments to malted barley lots:
- No comments to appearance of barley and low level of Skinned Grains compared to general level of crop 2017
- High Germination Energy in all malted barley lots
- Very good screening >2,8 mm
- High Water Sensitivity noticed

Malt results - Positive:
- Generally high extract levels in all trials
- Very high alpha-amylase activity found in one of the trials and better then average beta amylase levels found generally
- High Attenuation

Malt results - Negative:
- Below average malt modification expressed by betaglucan level and friability values

INDUSTRY BREWING

Brew house:
- Very good wort collection reported - Good laureating behavior
- Good extract yield in the brew house reported

Fermentation and filtration:
- As normal

Packaged beer:
- As normal

RECOMMENDATION

Laureate is a very high yielding malting barley variety with good agronomic features.
Barley grading in terms of grain fraction >2,8 mm is good. Laureate was found to be slightly difficult in regards to malt modification. Notice that Laureate is a Non-GN variety! Very high enzymatic level and high Attenuation in produced malt. Good brewery performance found through all trials.

Danish Preferred

CANDIDATE VARIETIES - INDUSTRY TEST

500 ha

Chanson *null-lox*
Cosmopolitan
Ellinor

Champ *null-lox*
Prospect
Applaus

Danish Preferred

CANDIDATE VARIETIES - STRESS TEST

Greenway
Revanche
Wish
KWS Chrissie
Stairway
Luther
LG Diablo
Focus

Danish Preferred

Danish Preffered, Stress Test, Crop 2018, Index Sheet

	KWS Irina_45	KWS Irina_43	KWS Irina_41	RGT Planet_45	RGT Planet_43	RGT Planet_41	Fairway_45	Fairway_43	Fairway_41	Focus_45	Focus_43	Focus_41	Greenway_45	Greenway_43	Greenway_41	KWS Chrissie_45	KWS Chrissie_43	KWS Chrissie_41	LG Diablo_45	LG Diablo_43	LG Diablo_41	Luther_45	Luther_43	Luther_41	Stairway_45	Stairway_43	Stairway_41	Revanche_45	Revanche_41	Revanche_41	Wish_45	Wish_43	Wish_41
Extract	4	4	4	4	4	4	4	4	4	2	2	2	1	1	1	4	4	4	4	4	5	4	5	5	3	4	4	2	2	3	3	3	3
Friability	4	4	5	3	4	5	4	5	5	2	3	3	1	1	1	2	3	4	3	4	5	3	4	5	3	4	5	1	2	3	2	3	3
Beta-Glucan	4	5	5	2	4	4	3	4	5	1	1	2	1	1	1	2	4	4	3	4	5	2	3	4	2	3	4	1	1	2	2	3	4
Viscosity	3	4	5	2	4	4	2	3	5	1	1	1	1	1	1	1	3	4	2	3	4	2	3	4	2	3	4	1	1	2	2	2	3
FAN, diff. *	3	5	8	-2	-3	1	3	6	8	3	0	-2	10	-3	-1	-5	-3	1	1	8	4	-13	-7	-3	-8	-11	-9	2	-2	-4	9	4	1
Soluble N, diff.*	20	25	45	5	5	30	-10	5	10	40	15	5	30	-10	5	-50	-40	-30	50	50	45	-35	-15	5	-50	-75	-75	-30	-30	-40	45	30	10
Kolback, diff.*	1	1	2	-1	0	2	-2	-1	-1	0	-1	-1	2	1	1	-2	-2	-1	1	2	2	-4	-2	-1	-2	-3	-4	2	2	0	4	3	3
Alpha-Amylase	5	5	4	1	1	3	3	4	4	2	2	2	1	3	1	3	3	3	2	3	4	2	3	3	5	5	5	2	1	3	1	3	4
Beta-Amylase	1	1	1	2	1	2	3	3	3	5	5	5	5	5	5	3	3	3	1	2	2	4	4	5	3	3	4	4	3	3	4	3	3
Limit Dextrinase	3	2	3	2	3	3	4	4	4	4	5	5	2	3	2	5	5	5	4	5	5	4	4	5	5	5	5	1	2	3	1	2	3
Attenuation	2	4	3	2	4	4	3	5	4	5	5	5	3	2	2	1	3	4	2	4	3	1	4	4	2	3	2	1	2	3	1	2	3
Turbidity	1	1	1	4	4	5	1	1	1	2	1	1	2	1	1	2	4	5	2	2	2	1	1	1	2	2	2	2	2	3	4	5	5
Index **	19	23	22	19	25	27	20	26	25	20	20	20	13	11	10	16	24	28	18	24	25	16	25	27	18	23	22	10	12	19	15	19	23
Index mean ***	41			45			46			40			23			42			43			42			40			26			36		

Danish Preferred

CANDIDATE VARIETIES - STRESS TEST

Greenway
Revanche
Wish
KWS Chrissie
Stairway
Luther
LG Diablo
Focus
Fairway

NAGOYA-protokollen, Compliance

- Instruks

Sejet planteforædling

Sejet marts 2019

Genetiske ressourcer i relation til EU´s ABS-forordning (ABS: Acces & Benefit Sharing)

Instruks til alle forædlere angående brug af genetiske ressourcer (GR) i programmerne ved Sejet Planteforædling I/S.

Generelt:

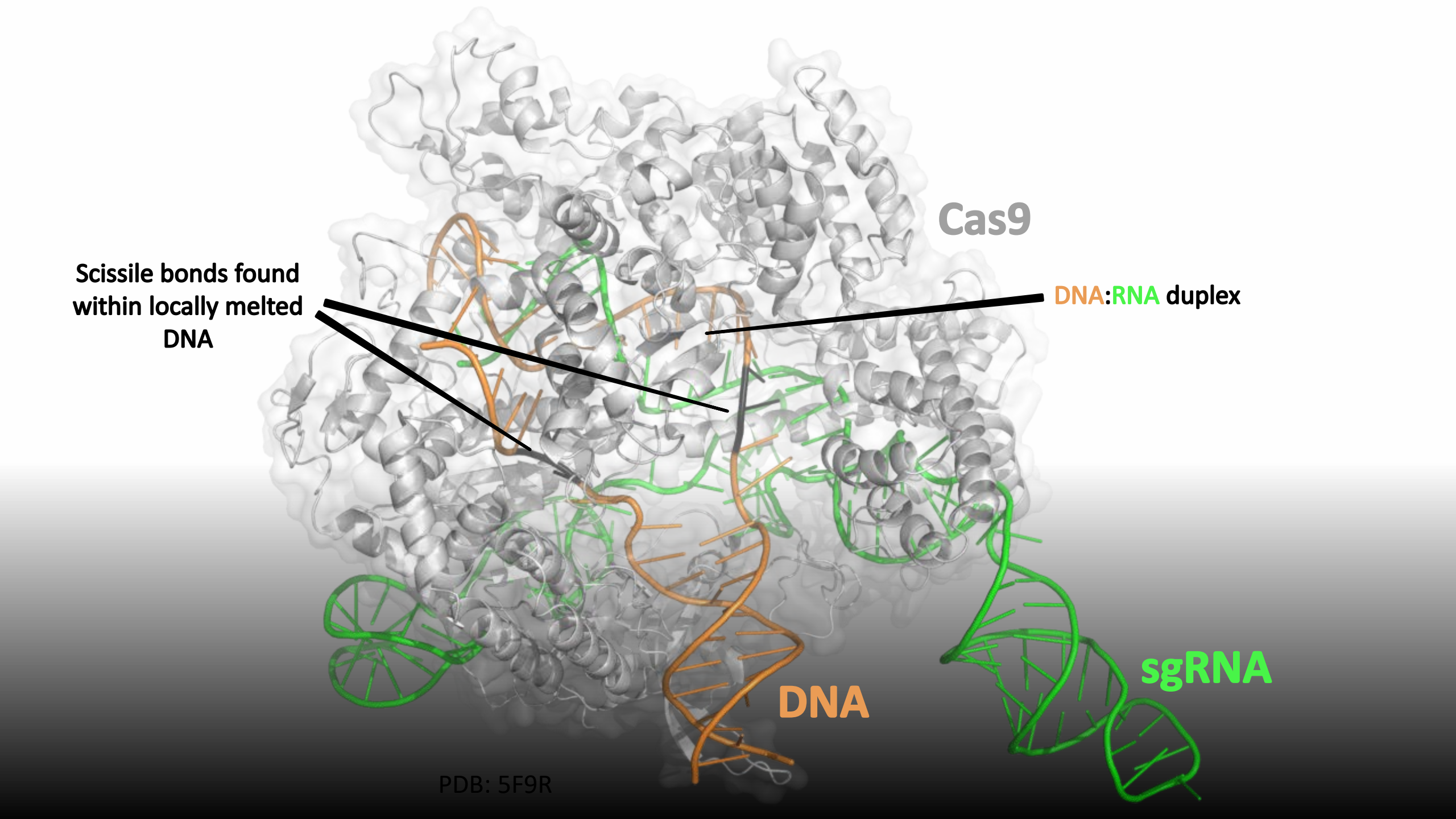
- Nagoyaprotokollen respekterer International Treaty og kommer derfor kun i spil for arter, der ikke er listet på anneks 1 under International Treaty (IT) eller for GR indsamlet i lande, der ikke er medlem af International Treaty.
- Sejet har aktiv forædling inden for følgende arter: hvede, byg, triticale og hestebønner - alle arter under anneks1 i IT.
- Kun materiale indsamlet efter 12. oktober 2014 er under Nagoya – denne dato gælder også i forhold til genbanker dvs. kun materiale indlejret efter 12. oktober 2014 kan komme på tale i forhold til Nagoyaprotokollen.

Følgende retningslinjer skal overholdes i forhold til brug af GR i Sejets forædlings-programmer:

- Der indsamles de facto aldrig GR-materiale til brug i Sejets forædling – dette vil også være tilfældet fremover med andre ord: DER HAR ALDRIG INDGÅET OG VIL ALDRIG INDGÅ GR-MATERIALE FRA EGEN INDSAMLING I KRYDSNINGER ved Sejet Planteforædling.
- Fra oktober 2014 og fremover gælder at anvendt GR-materiale, altid vil være tilsendt materiale fra genbanker eller universiteter. Sådant materiale skal altid være udleveret under en MTA (Material Transfer Agreement – typisk IT´s sMTA).
- Ved deltagelse i forskningsprojekter, hvor der indgår GR, må disse GR kun anvendes i Sejet krydsningsprogram, hvis der er underskrevet en MTA for pågældende GR.

DANSKE SORTSEJERE

Variety Denmark


Cas9
Scissile bonds found within locally melted DNA
DNA:RNA duplex
DNA
sgRNA
PDB: 5F9R

EU domstolens afgørelse – vejen frem

DANSKE SORTSEJERE

Variety Denmark

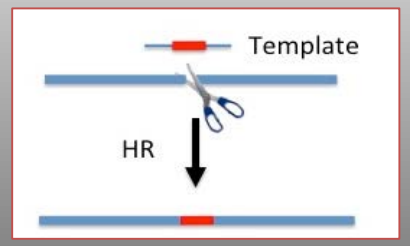
CRISPR-cas kan bruges på forskellig måde – vi bør kun betræde den rene sti

Simple Breeding

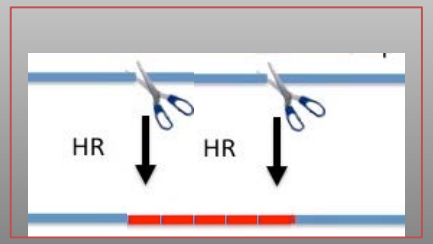
Induceret mutagenese

Single cut

Editering



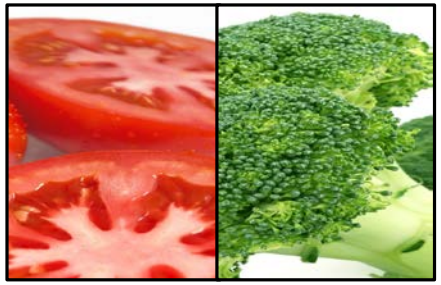
Allel-skifte



EU domstolens afgørelse – vejen frem

- **Mutagenese undtagelsen annex 1b i direktiv 2001/18 b bør gennem EU proces, opdateres til nuværende tekniske muligheder for at foretage klassisk mutagenese**

Patentability - What has been done so far to re-establish the balance?



2007-2008
Cases G2/07 & G1/08 launched

2010
Decision in G2/07 & G1/08 rendered: processes containig or consisting of the steps of sexually crossing the whole genomes of plants and subsequently selecting plants, in principle are excluded from patentability

2012-2013
New appeals G2/12 & G2/13 launched

2015
Decision in G2/12 & G2/13 rendered: the exclusion of EBPs does not have any negative effect on the allowability of product claims directed to plants or plant material.

2017
EPO AC adopts new Rule 28(2): European patents shall not be granted in respect of plants exclusively obtained by means of an EBP

2012
EU adopts unitary patent package incl. UPCA: Article 27(c) limited breeder's exemption (not yet in force)

2013
Commission establishes Expert Group

2016
NL Presidency symposium

COM Notice published: COM takes the view that the legislator's intent was to exclude plants obtained by EBP from patentability

Plant products produced by essentially biological processes

5 December 2018 in case T 1063/18
Technical Board of Appeal at EPO

- pepper plants and fruits with nutritional value
- excluded from patent protection under Article 53 (b) and Rule 28 (2) EPC
- the provisions of the EPC prevail

Nu kan man igen tage patent på genbank-material (f.eks. restore-gener til hvede CMS-hybrider)

IP i planter - UPOV eller Patenter

Er det en illusion at tro at UPOV og Patenter kan leve side om side som IP-system til plantesorter?

IP i planter - UPOV eller Patenter

- ”Simple Breeding” = et brud på DNA-strengene, cellen reparerer
- Solens UV-stråling, strålebehandling/kemisk behandling, f.eks. CRISP

EPO´s disclaimer = tilståelsessag

naturen. Er der således tale om en opdagelse og ikke en opfindelse?

- Mutationsforædling (”Simple Breeding”) er måske i virkeligheden en ”essentiel biologisk proces” og dermed ikke patenterbar?

SLUT