

## Faglig Beretning 2020

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### Projektets titel

IPM bekæmpelse af kartoffelskimmel

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### Tilskudsmodtager

Aarhus Universitet,  
Science and Technology, Institut for Agroøkologi  
Forsøgsvej 1, Flakkebjerg  
4200 Slagelse  
CVR nummer 31119103  
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# Kartoffelafgiftsfonden

IPM bekæmpelse af kartoffelskimmel

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**Projektstart:**  
Marts 2020

**Projektafslutning:**  
December 2020

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## Resumé

Aarhus Universitet (AU) i Flakkebjerg har i 2020 udført forsøg med alternative midler mod kartoffelskimmel samt et forsøg med kombinationer af alternative midler og konventionelle midler. Førstnævnte forsøg var en gentagelse af et forsøg fra 2019, hvor en række midler sammenlignedes ved 11 sprøjtninger mod kartoffelskimmel. Alternative midler består dels af midler med naturlig oprindelse, basisstoffer samt midler med en indirekte effekt (biostimulanter).

Begge års forsøg har vist, at Resistim 0-7-11 kan forsinke udviklingen af skimmelen, mens det i 2020 også blev bekræftet, at Kumulus S har effekt. Midlet har en godkendelse til mindre anvendelse i økologiske kartofler. Visse chitosan baserede midler (ChiProPlant og AgriCHOS) synes også at have nogen, om end kortvarig effekt, mens et lignende produkt Fytosol ikke har virket i disse forsøg. Øvrige testede midler i disse forsøg har stort set ingen effekt haft.

I et forsøg med kombinationer af alternative og konventionelle midler har nedsat dosering af det konventionelle middel Ranman Top virket godt, og derfor har effekten af substitution af kemiske behandlinger med enten Resistim eller AgriCHOS kun i begrænset omfang vist sit potentiale for at kunne reducere inputtet af konventionelle midler.

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## Projektets faglige forløb

Med støtte fra Kartoffelafgiftsfonden udførte AU Flakkebjerg i 2019 en undersøgelse af "alternative fungicider" effekt overfor kartoffelskimmel (*Phytophthora infestans*). Alternative plantebeskyttelsesmidler er et vidt begreb, der bl.a. dækker over allerede godkendte plantebeskyttelsesmidler, men af naturlig oprindelse, basisstoffer og biostimulanter. En mere detaljeret beskrivelse af stofferne kan findes i den faglige beretning om forsøget i 2019. Forsøget med alternative fungicider blev gentaget i 2020, og resultatskemaer kan findes som bilag bagest i denne beretning.

Begge forsøg blev udført på lerblandet sandjord på Forskningscenter Flakkebjerg i sorten Kuras. Behandlinger blev i 2020 indledt henholdsvis 22. juni. Der blev udført 12 sprøjtninger i 2020 med 3-7 dages interval indtil starten af september. Forsøget var anlagt i et design med mulighed for kunstig smitte, og i begyndelsen af juli blev smitterækker (ikke inde i selve forsøget) inficeret med kartoffelskimmel.

I 2019 havde ChiProplant og Resistim 0-7-11 bedst effekt overfor skimmel i begyndelsen af august, men ingen af produkterne kunne holde skimmelen borte da den for alvor udviklede sig i slutningen af måneden. Kun Resistim 0-7-11 gav et signifikant merudbytte af knolde i 2019 (ca. 25% i forhold til ubehandlet).

Trods kunstig smitte udviklede skimmelen sig langsomt i juli 2020, og med det varme og tørre vejr i slutningen af måneden og det meste af august forblev angrebet svagt august måned ud. Først den 3. september noteredes det første meget tydelige angreb med 27,5% dækning i ubehandlet. De fleste behandlinger var på det tidspunkt signifikant mindre angrebet. Især Kumulus S (svovl) og Resistim 0-7-11 skilte sig ud med mindst angreb. Seks dage senere den 9. september havde angrebet udviklet sig epidemisk, og det meste af forsøget var over 95% angrebet. Dog skilte Kumulus og Resistim sig fortsat ud med signifikant mindre an-

# Kartoffelafgiftsfonden

greb. Denne forskel var dog elimineret ved bedømmelsen den 17. september. Dog var Resistim fortsat signifikant forskellig, men med et højt angrebsniveau. Der blev i alt udført 8 bedømmelser, og beregning af AUDPC (arealet under angrebskurven) over hele perioden bekræfter, at Kumulus og Resistim skiller sig ud. Trods forsinkelsen af angrebet, så har hverken Kumulus eller Resistim medført merudbytte af knolde. Tilsvarende har der ingen signifikante forskelle været i stivelsesindhold.

Armicarb 85 SP synes at forøge udviklingen af kartoffelskimmel i forhold til ubehandlet. Dette blev observeret i 2019 og igen i 2020. Dog blev det i 2020 bemærket, at nogle af symptomerne i virkeligheden måske var phytotoks, altså skader forårsaget af midlet, der let kunne forveksles med symptomer, der skyldes angreb af kartoffelskimmel. Om symptomerne skyldes det ene eller andet har ikke kunnet fastslås med sikkerhed, men uanset hvad, så må brugen af Armicarb i kartofler frarådes.

Konklusionen på forsøgene i 2019 og 2020 er at enkelte midler (Resistim 0-7-11, Kumulus S, ChiProplant) i varierende grad har kunnet forsinke udviklingen af kartoffelskimmel i 1-3 uger. Ved kraftige angreb kommer midlerne dog til kort, og er ikke sammenlignelige med kendte kemiske løsninger. De fleste af de øvrige alternative midler har en svag forsinkende effekt, men kun i sygdommens startfase med lave angrebsgrader.

Sideløbende med forsøget med alternative midler blev der udført et forsøg, hvor kombinationer af alternative midler og konventionel kemi blev afprøvet. Formålet var at undersøge mulighederne for at substituere nogle af de mange fungicid sprøjtninger med alternative midler for på den måde at imødekomme nogle af de udfordringer og kritik, som kartoffelavlens en pesticidtung afgrøde, står overfor. Samtidig vil risikoen for mulige resistensproblemer kunne reduceres med disse strategier.

Forsøgsplanen var forskellige kombinationer af Ranman Top (konventionelt fungicid) og enten Resistim 0-7-11 eller AgriCHOS i forskellige strategier, hvor behandlingsindekset i de fleste er halveret som følge af brugen af alternative midler i stedet for konventionel kemi. Resistim har som bekendt klaret sig godt i føromtalt forsøg, mens AgriCHOS, der er et chitosan baseret produkt, viste gode resultater i flere forsøg i en afprøvnings i 2019.

Forsøget blev udført i samme mark som føromtalt forsøg med samme langsomme udvikling af kartoffelskimmel. I begyndelsen af september udvikledes skimmelen, og alle behandlinger var signifikant forskellige fra ubehandlet, der havde en dækning på 30,5%. Resistim og AgriCHOS havde reduceret smitten til mellem det halve og en tredjedel af ubehandlet, mens strategier med kemi havde meget lave angrebsgrader. En uge senere havde smitten eksploderet med 95% i dækning i ubehandlet. AgriCHOS alene kunne ikke holde angrebet borte, mens Resistim holdt lidt længere, og var i midten af september fortsat signifikant forskellig fra ubehandlet, om end med hovedparten af planterne dækket af skimmel.

Det sene angreb af skimmel, og det faktum, at det halve input af Ranman Top (12 x 0,25 l/ha) var tilstrækkeligt til at holde skimmelen på et acceptabelt niveau, medførte at kun få konklusioner har kunnet drages af forsøget. Det er dog tydeligt, at effekten har været størst af de strategier, hvor timingen af den konventionelle kemi (Ranman Top) i forhold til skimmeludviklingen (sidst i perioden) har passet bedst. Det er således også disse strategier, hvori de højeste merudbytter er opnået (signifikante i forhold til ubehandlet).

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## Offentliggørelse af projektets resultater

Projektet skulle have været præsenteret og fremvist ved et "Åbent Hus" arrangement i Flakkebjerg, der desværre blev aflyst pga. covid-19.

Der er i 2021 bevilget et nyt projekt, hvor forsøget med konventionelle og alternative midler kombineres samtidig med at et nyt forsøg, hvori også sorter indgår, igangsættes i 2021. Det er hensigten, at øge offentliggørelsen efter disse forsøg ved både mundtlige præsentationer og eventuel udgivelse af artikel i relevant fagblad.

Bekæmpelse af kartoffelskimmel med alternative midler  
 Trial ID: 20525 Location: Flakkebjerg Trial Year: 2020  
 Protocol ID: 20525 Investigator (Creator): Hans Hansen  
 Project ID: 31220 Study Director: Peter Hartvig  
 Sponsor Contact: KAF

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	Appl Description
1	Ubehandlet				
2	Kumulus S	6	kg/ha	ABCDEFGHIJK	7 days interval But in High risk 3-4 days
3	Armicarb 85 SP	5	kg/ha	ABCDEFGHIJK	7 days interval But in High risk 3-4 days
4	Serifel	0,5	kg/ha	ABCDEFGHIJK	7 days interval But in High risk 3-4 days
5	Extract of Equisetum arvense	300	L/ha	ABCDEFGHIJK	7 days interval But in High risk 3-4 days
6	Extract of Urtica spp.	300	L/ha	ABCDEFGHIJK	7 days interval But in High risk 3-4 days
7	Lechithin	0,8	kg/ha	ABCDEFGHIJK	7 days interval But in High risk 3-4 days
8	ChiProPlant	0,3	kg/ha	ABCDEFGHIJK	7 days interval But in High risk 3-4 days
9	Compost tea	600	L/ha	ABCDEFGHIJK	7 days interval But in High risk 3-4 days
10	Resistim 0-7-11	3	L/ha	ABCDEFGHIJK	7 days interval But in High risk 3-4 days
11	Serenade ASO	4	L/ha	ABCDEFGHIJK	7 days interval But in High risk 3-4 days
12	Fytosol	4	L/ha	ABCDEFGHIJK	7 days interval But in High risk 3-4 days

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 Sponsor Contact: KAF

**General Trial Information**

**Study Director:** Peter Hartvig **Title:** Study director  
**Investigator:** Hans Hansen **Title:** Fieldmanager

**Discipline:** F fungicide **Data Location:** ARM ARM Assessment Data  
**Trial Status:** I one-year/interim **Trial Reliability:** HIGH high quality  
**Trial Status Date:** 29-12-20 **Last Changed By:** Hans Hansen  
**Trial Usage/Type:** SCR Screening/Exploratory

**Initiation Date:** 1-4-20  
**Completion Date:** 31-12-20

**Test Facility:** Aarhus University Department of Agroecology  
**GEP Accreditation Link:** <http://gepcertibase.eu/certificate/download/1d653306ee1>

**Trial Location**

**Address (Location):** AU Flakkebjerg  
**City:** Slagelse **Country:** DNK Denmark  
**State/Prov.:** Region Sjælland 85 **Region:** Zealand  
**Postal Code:** 4200 **Climate Zone:** EPOMAR Eppo Maritime

**Latitude of LL Corner:** °: 55,31947 N  
**Longitude of LL Corner:** °: 11,387785 E DNK85 56,01 - 54,55  
 12,55 - 10,86

**Altitude of LL Corner:** 30,00 m  
**Time Zone:** Europe/Copenhagen

**Conducted Under GLP:** No **Official Trial ID:** 20525  
**Conducted Under GEP:** No

No.	Guideline	Discipline	Description
1.	PP 1/2(4)	F	Phytophthora infestans on potato

**Keywords:** Bekæmpelse af kartoffelskimmel med alternative midler

**Contacts**

**Role:** STYDIR study director **Title:** Study director  
**Study Director:** Peter Hartvig  
**Organization:** Aarhus University, Department of Agroecology  
**Address 1:** Forsøgsvej 1 **Phone No.:** +45 87158203 **Mobile No.:** +45 22283301  
**Country:** DNK Denmark **E-mail:** peter.har@agro.au.dk  
**City:** Slagelse **Postal Code:** 4200

**Role:** INVEST investigator **Title:** Fieldmanager  
**Investigator:** Hans Hansen  
**Organization:** Aarhus University, Department of Agroecology  
**Address 1:** Forsøgsvej 1 **Mobile No.:** +45 22283356  
**Country:** DNK Denmark **E-mail:** hansH.hansen@agro.au.dk  
**City:** Slagelse **Postal Code:** 4200

**Role:** SPONSR sponsor  
**Sponsor:** KAF  
**Organization:** Kartoffelafgiftsfonden  
**Address 1:** Axeltorv 3  
**Country:** DNK Denmark **State/Prov:** 84 **Postal Code:** 1609  
**City:** København

**Crop Description**

**Crop 1:** C SOLTU Solanum tuberosum Potato **BBCH Scale:** BPOT  
**Crop Group:** 1 **Stage Scale:** BBCH  
**Variety:** Kuras **Maturity Group:** late  
**Attributes:** Late susceptible starch variat  
**Planting Date:** 23-4-20 **Planting Rate:** 3 P/ROWm  
**Depth:** 15 cm  
**Rows per Plot:** 5 **Planting Method:** TRAMAC transplanted - machine  
**Row Spacing:** 33 cm **Planting Equipment:** MT transplanter, mechanical  
**Spacing within Row:** 75 cm **Plant Arrangement:** BED5RO  
**Emergence Date:** 1-6-20 **Harvest Equipment:** ASA-LIFT KT 100  
**Harvest Date:** 13-10-20 **Harvested Width:** 2,25 m  
**Harvested Length:** 7 m

**Pest Description**

**Pest 1 Type:** D **Code:** PHYTIN Phytophthora infestans  
**Common Name:** Late blight of potato **Stage Scale:** BBCH  
**Establishment Date:** 1-7-20 **Artificial Population:** N  
**Establishment Rate:** 0,5 1 pr plant **Stage at Establishment:** SPORUL  
**Concentration:** 10000 spores pr. ml  
**Establishment Method/Description:** Spraying  
**Crop:** 1 SOLTU **Stage at Infestation:** 63

**Site and Design**

**Treated Plot Width:** 3,75 m **Total Plot Width:** 4,5 m **Site Type:** FIELD field  
**Treated Plot Length:** 7 m **Total Plot Length:** 9 m **Experimental Unit:** 48 PLOT plot  
**Treated Plot Area:** 26,25 m<sup>2</sup> **Treatments:** 12 **Tillage Type:** CONTIL conventional-till  
**Replications:** 4 **Study Design:** RACOB� Randomized Complete Block (RCB)  
**Plots arranged as in field?:** X  
**Untreated Arrangement:** INCLUDED single control randomized in each block  
**Block Arrangement:** B2APSS block 2 above 1, 3 above 4, 2 beside 3, 1 beside 4, plots side by side

Bekæmpelse af kartoffelskimmel med alternative midler  
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**Maintenance**

No.	Date	Type	Maintenance Product Name	Rate	Rate Unit
1.	21-7-20	FUNG	Narita	0,4	L/HA
2.	4-8-20	FUNG	Propulse	0,45	L/HA
3.	18-8-20	FUNG	Narita	0,4	L/HA
4.	1-9-20	FUNG	Propulse	0,45	L/HA

**Soil Description**  
 Description Name: F 33  
 % Sand: 75 % OM: 1,7 Texture: FCL fine clay loam  
 % Silt: 11 pH: 7,6 Soil Name: JB 6  
 % Clay: 12 Fert. Level: E excellent

**Weather Conditions**  
 Overall Moisture Conditions: DRWEDR dry-wet-dry  
 Closest Weather Station: DMI Flakkebjerg Distance: 500 Ma

No.	Date	Moisture Total	Unit	Type	Type Description
1.	30-6-20	25	mm	SPLAMO	sprinkler - lateral move
2.	21-7-20	25	mm	SPLAMO	sprinkler - lateral move
3.	4-8-20	25	mm	SPLAMO	sprinkler - lateral move
4.	18-8-20	25	mm	SPLAMO	sprinkler - lateral move

**Application Description**

	A	B	C	D	E	F	G	H	I	J	K
Application Date	22-6-20	29-6-20	9-7-20	13-7-20	20-7-20	28-7-20	4-8-20	10-8-20	17-8-20	24-8-20	31-8-20
Appl. Start Time	20:00	13:00	16:30	12:30	14:30	13:00	12:00	13:30	14:00	11:30	16:00
Appl. Stop Time	20:45	13:45	17:30	13:15	15:30	13:45	13:00	14:30	15:00	12:30	17:00
Interval to Prev. Appl.		7 DAYS	10 DAYS	4 DAYS	7 DAYS	8 DAYS	7 DAYS	6 DAYS	7 DAYS	7 DAYS	7 DAYS
Application Method	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
Application Placement	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR
Applied By	HHH	HHH	HHH	HHH	HHH	JHP	JHP	TNJ	HHH	HHH	HHH
Air Temperature Start, Stop	19,1 18,3	21,2 21,2	16,3 16,1	16,3 16,6	18,7 19,5	20,1 50,5	18,0 19,2	31,5 31,5	29,9 29,9	17,1 17,4	18,8 18,7
% Relative Humidity Start, Stop	61,6 65,3	52,6 43,2	65,4 67	70,8 70,2	57,3 55,2	62,7 61	62,9 62,5	48,5 47,2	30 30	72,8 71,1	47,2 48,5
Wind Velocity+Dir. Start	5,87 MPS NW	2,93 MPS	0,69 MPS	2,33 MPS NW	4,17 MPS	4,74 MPS W	3,1 MPS SW	0,57 MPS SSE	0,84 MPS SSE	2,05 MPS NW	0 MPS NE
Wind Velocity+Dir. Stop	3,0 MPS NW	2,93 MPS	0,69 MPS	2,04 MPS NW	4,17 MPS	4,74 MPS W	2,5 MPS SW	0,57 MPS SSE	0,84 MPS SSE	1,07 MPS NW	0 MPS NE
Wet Leaves (Y/N)	N no	N no	N no	N no	N no	N no	N no	N no	N no	N no	N no
% Cloud Cover	5	10	75	65	15	0	0	0	0	25	0

	L
Application Date	7-9-20
Appl. Start Time	10:00
Appl. Stop Time	11:00
Interval to Prev. Appl.	7 DAYS
Application Method	SPRAY
Application Placement	FOLIAR
Applied By	TNJ
Air Temperature Start, Stop	14,7 15,3
% Relative Humidity Start, Stop	77,1 71,3
Wind Velocity+Dir. Start	3,03 MPS NNW
Wind Velocity+Dir. Stop	5,01 MPS NNW
Wet Leaves (Y/N)	N no
% Cloud Cover	100

**Crop Stage At Each Application**

	A	B	C	D	E	F	G	H	I	J	K
Crop 1 Code, BBCH Scale	SOLTU BPOT	SOLTU BPOT	SOLTU BPOT	SOLTU BPOT	SOLTU BPOT	SOLTU BPOT	SOLTU BPOT	SOLTU BPOT	SOLTU BPOT	SOLTU BPOT	SOLTU BPOT
Days after Emergence	21	28	38	42	49	57	64	70	77	84	91
Stage Scale Used	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH
Stage Majority, Percent	31	62	63	63	64	66	68	69	69	91	91

Bekæmpelse af kartoffelskimmel med alternative midler  
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Crop 1 Code, BBCH Scale	SOLTU BPOT
Days after Emergence	98
Stage Scale Used	BBCH
Stage Majority, Percent	92

## Pest Stage At Each Application

	A	B	C	D	E	F	G	H	I
Pest 1 Code, Type, Scale	PHYTIN D BBCH	PHYTIN D BBCH	PHYTIN D BBCH	PHYTIN D BBCH	PHYTIN D BBCH	PHYTIN D BBCH	PHYTIN D BBCH	PHYTIN D BBCH	PHYTIN D BBCH
Crop Part Attacked, Code	SOLTU	SOLTU	SOLTU	SOLTU	SOLTU	SOLTU	SOLTU	SOLTU	SOLTU

	J	K	L
Pest 1 Code, Type, Scale	PHYTIN D BBCH	PHYTIN D BBCH	PHYTIN D BBCH
Crop Part Attacked, Code	SOLTU	SOLTU	SOLTU

## Application Equipment

	A	B	C	D	E	F	G	H	I	J	K	L
Appl. Equipment	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic
Equipment Type	SPTRMO	SPTRMO	SPTRMO	SPTRMO	SPTRMO	SPTRMO	SPTRMO	SPTRMO	SPTRMO	SPTRMO	SPTRMO	SPTRMO
Operation Pressure	3 Bar	3 Bar	3 Bar	3 Bar	3 Bar	3 Bar	3 Bar	3 Bar	3 Bar	3 Bar	3 Bar	3 Bar
Nozzle Type	Low drift	Low drift	Low drift	Low drift	Low drift	Low drift	Low drift	Low drift	Low drift	Low drift	Low drift	Low drift
Nozzle Size	ISO 025	ISO 025	ISO 025	ISO 025	ISO 025	ISO 025	ISO 025	ISO 025	ISO 025	ISO 025	ISO 025	ISO 025
Nozzle Spacing	50 Cm	50 Cm	50 Cm	50 Cm	50 Cm	50 Cm	50 Cm	50 Cm	50 Cm	50 Cm	50 Cm	50 Cm
% Coverage	100	100	100	100	100	100	100	100	100	100	100	100
Boom Length	375 m	375 m	375 m	375 m	375 m	375 m	375 m	375 m	375 m	375 m	375 m	375 m
Boom Height	50 Cm	50 Cm	50 Cm	50 Cm	50 Cm	50 Cm	50 Cm	50 Cm	50 Cm	50 Cm	50 Cm	50 Cm
Ground Speed	4 Km/h	4 Km/h	4 Km/h	4 Km/h	4 Km/h	4 Km/h	4 Km/h	4 Km/h	4 Km/h	4 Km/h	4 Km/h	4 Km/h
Carrier	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Minimum Mix/Treatment	3,15 L	3,15 L	3,15 L	3,15 L	3,15 L	3,15 L	3,15 L	3,15 L	3,15 L	3,15 L	3,15 L	3,15 L
Mix Size	7,5 L	7,5 L	7,5 L	7,5 L	7,5 L	7,5 L	7,5 L	7,5 L	7,5 L	7,5 L	7,5 L	7,5 L
Propellant	COMAIR	COMAIR	COMAIR	COMAIR	COMAIR	COMAIR	COMAIR	COMAIR	COMAIR	COMAIR	COMAIR	COMAIR
Tank Mix (Y/N)	Y yes	Y yes	Y yes	Y yes	Y yes	Y yes	Y yes	Y yes	Y yes	Y yes	Y yes	Y yes

## Treatment Appl. Comments

## Trt No Treatment Application Comment

8 Application H treatment 2 3 4 7 8 10 11 12 was carried out on 10-August Treatment 5, 6 9 was carried out on 11-August

Context	Date	By	Notes
STATUS	4-6-20	Hans Hansen	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	13-8-20	Hans Hansen	Automatically added by ARM: Trial Status updated to 'E' when Rating Date entered.

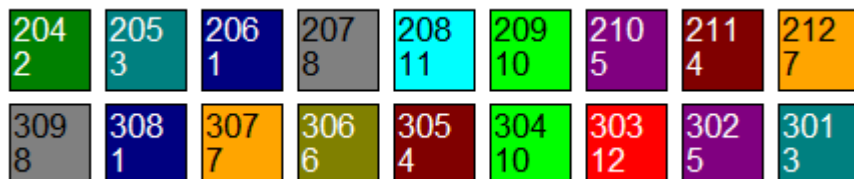
Bekæmpelse af kartoffelskimmel med alternative midler		
Trial ID: 20525	Location: Flakkebjerg	Trial Year: 2020
Protocol ID: 20525	Investigator (Creator): Hans Hansen	
Project ID: 31220	Study Director: Peter Hartvig	
Sponsor Contact: KAF		

**Trial Map Treatment Description**

Trt	Code	Description
1	CHK	Ubehandlet
2		Kumulus S 6 kg/ha
3		Armicarb 85 SP 5 kg/ha
4		Serifel 0.5 kg/ha
5		Extract of Equisetum arvense 300 L/ha
6		Extract of Urtica spp. 300 L/ha
7		Lechithin 0.8 kg/ha
8		ChiProPlant 0.3 kg/ha
9		Compost tea 600 L/ha
10		Resistim 0-7-11 3 L/ha
11		Serenade ASO 4 L/ha
12		Fytosol 4 L/ha



Additional section below is at right of previous section.





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Pest Type	D Disease	D Disease	D Disease	D Disease	D Disease	D Disease		
Pest Code	PHYTIN	PHYTIN	PHYTIN	PHYTIN	PHYTIN	PHYTIN		
Pest Scientific Name	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans		
Pest Name	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato		
Crop Type, Code	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU		
BBCH Scale	BPT	BPT	BPT	BPT	BPT	BPT		
Crop Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum		
Crop Name	Potato	Potato	Potato	Potato	Potato	Potato		
Crop Variety	Kuras	Kuras	Kuras	Kuras	Kuras	Kuras		
Description	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato		
Rating Date	29-7-20	5-8-20	12-8-20	19-8-20	25-8-20	3-9-20		
SE Group No.	1	4	5	6	7	8		
Part Rated	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C		
Rating Type	PESSEV	PESSEV	PESSEV	PESSEV	PESSEV	PESSEV		
Rating Unit	%	%	%	%	%	%		
Sample Size	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT		
Collection Basis								
Number of Subsamples	1	1	1	1	1	1		
Crop Stage Scale	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH		
Crop Stage Majority/Min/Max	68 - -	69 - -	69 - -	69 - -	69 - -	69 - -		
Assessed By	IAK	IAK	HHH	HHH	HHH	HHH		
Days After First/Last Applic.	37 1	44 1	51 2	58 2	64 1	73 3		
Trt-Eval Interval	37 DA-A	44 DA-A	51 DA-A	58 DA-A	64 DA-A	73 DA-A		
Plant-Eval Interval	97 DP-1	104 DP-1	111 DP-1	118 DP-1	124 DP-1	133 DP-1		
Days After Emergence	58 DE-1	65 DE-1	72 DE-1	79 DE-1	85 DE-1	94 DE-1		
ARM Action Codes								
Number of Decimals		3	3	3	3	1		
Trt Treatment No. Name	Rate	Appl						
	Unit	Code						
1 Ubehandlet			0,0 -	0,000 -	0,001 -	0,000 -	0,001 -	27,5 abc
2 Kumulus S	6 kg/ha	ABCDEF	0,0 -	0,001 -	0,001 -	0,003 -	0,003 -	6,0 d
3 Armicarb 85 SP	5 kg/ha	ABCDEF	0,0 -	0,125 -	0,500 -	0,500 -	0,625 -	43,3 a
4 Serifel	0,5 kg/ha	ABCDEF	0,0 -	0,001 -	0,000 -	0,000 -	0,000 -	17,5 bcd
5 Extract of Equisetum arvense	300 L/ha	ABCDEF	0,0 -	0,000 -	0,000 -	0,000 -	0,000 -	23,8 bcd
6 Extract of Urtica spp.	300 L/ha	ABCDEF	0,0 -	0,015 -	0,018 -	0,013 -	0,013 -	16,5 bcd
7 Lechithin	0,8 kg/ha	ABCDEF	0,0 -	0,000 -	0,000 -	0,000 -	0,000 -	21,3 bcd
8 ChiProPlant	0,3 kg/ha	ABCDEF	0,0 -	0,000 -	0,000 -	0,000 -	0,000 -	18,0 bcd
9 Compost tea	600 L/ha	ABCDEF	0,0 -	0,006 -	0,008 -	0,003 -	0,000 -	25,0 bcd
10 Resistim 0-7-11	3 L/ha	ABCDEF	0,0 -	0,000 -	0,000 -	0,000 -	0,000 -	7,3 cd
11 Serenade ASO	4 L/ha	ABCDEF	0,0 -	0,003 -	0,005 -	0,005 -	0,003 -	27,5 abc
12 Fytosol	4 L/ha	ABCDEF	0,0 -	0,005 -	0,005 -	0,000 -	0,001 -	33,3 ab
LSD P=.05				0,1033	0,4140	0,4140	0,5179	12,68
Standard Deviation	0,00			0,0718	0,2878	0,2878	0,3600	8,81
CV	0,0			549,95	641,88	660,58	671,1	39,64
Grand Mean	0,00			0,0131	0,0448	0,0436	0,0536	22,23
Levene's F	0,00			0,966	0,987	0,992	0,995	1,095
Levene's Prob(F)	0,00*			0,493	0,476	0,472	0,47	0,393
Rank X2	.			.	.	.	.	.
P(Rank X2)	.			.	.	.	.	.
Skewness	.			6,8264*	6,9185*	6,9208*	6,9237*	0,5135
Kurtosis	.			47,0076*	47,9073*	47,9287*	47,9567*	-0,5809
Replicate F	0,000			1,210	1,085	1,085	1,060	2,840
Replicate Prob(F)	1,0000			0,3214	0,3692	0,3692	0,3792	0,0529
Treatment F	0,000			0,978	0,994	0,999	0,999	5,577
Treatment Prob(F)	1,0000			0,4850	0,4721	0,4681	0,4675	0,0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
 Missing data estimates are included in columns: Average=10,11,12,13,14,15

Could not calculate LSD (% mean diff) for columns 1 because error mean square = 0.

Bekæmpelse af kartoffelskimmel med alternative midler  
 Trial ID: 20525 Location: Flakkebjerg Trial Year: 2020  
 Protocol ID: 20525 Investigator (Creator): Hans Hansen  
 Project ID: 31220 Study Director: Peter Hartvig  
 Sponsor Contact: KAF

Pest Type	D Disease	D Disease	D Disease	D Disease	C SOLTU	C SOLTU			
Pest Code	PHYTIN	PHYTIN	PHYTIN	PHYTIN	BPOT	BPOT			
Pest Scientific Name	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Solanum tuberosum	Solanum tuberosum			
Pest Name	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato	Potato	Potato			
Crop Type, Code	C SOLTU	C SOLTU	C SOLTU	C SOLTU	YIELD, kg/plot	YIELD HKG/HA			
BBCH Scale	BPOT	BPOT	BPOT	BPOT	16-10-18	16-10-18			
Crop Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	13	26			
Crop Name	Potato	Potato	Potato	Potato	11	11			
Crop Variety	Kuras	Kuras	Kuras	Kuras	TUBER C	TUBER C			
Description	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	PESINC	YIELD			
Rating Date	9-9-20	17-9-20	11-11-20	18-11-20	PERCENT	KG/PLOT			
SE Group No.	9	10	11	11	15,75 m2	1 ha			
Part Rated	PLANT C	PLANT C	PLANT C	TUBER C	1 PLOT	1 PLOT			
Rating Type	PESSEV	PESSEV	PESSEV	PESINC	1	1			
Rating Unit	%	%	%	PERCENT	YIELD	YIELD			
Sample Size	1 PLOT	1 PLOT	1 PLOT	AUDPC	15,75 m2	1 ha			
Collection Basis				100 TUBER	1 PLOT	1 PLOT			
Number of Subsamples	1	1	1	1	1	1			
Crop Stage Scale	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH			
Crop Stage Majority/Min/Max	69 - -	91 - -	68 - -	99 - -	BBCH	BBCH			
Assessed By	HHH	HHH	Mie	PEA					
Days After First/Last Applic.	79 2	87 10	149 72	-615 -615		-615 -615			
Trt-Eval Interval	79 DA-A	87 DA-A		-615 DA-A		-615 DA-A			
Plant-Eval Interval	139 DP-1	147 DP-1		-555 DP-1		-555 DP-1			
Days After Emergence	100 DE-1	108 DE-1		-594 DE-1		-594 DE-1			
ARM Action Codes			T1 AUDPC APC	170 DE-1		TY2 APOC			
Number of Decimals			1		1	1			
Trt Treatment No. Name	Rate	Appl							
	Rate Unit	Code							
1 Ubehandlet			96,8 a	100,0 a	1283,5 ab (0,0%)	1,3 -	79,1 -	501,9 - (100,0%)	
2 Kumulus S	6 kg/ha	ABCDEFGHIJK	78,3 b	98,5 a	986,8 c (23,1%)	0,5 -	73,2 -	464,8 - (92,6%)	
3 Armicarb 85 SP	5 kg/ha	ABCDEFGHIJK	99,8 a	100,0 a	1434,9 a (-11,8%)	1,3 -	68,3 -	433,4 - (86,4%)	
4 Serifel	0,5 kg/ha	ABCDEFGHIJK	98,0 a	100,0 a	1217,3 b (5,2%)	1,0 -	75,3 -	477,9 - (95,2%)	
5 Extract of Equisetum arvense	300 L/ha	ABCDEFGHIJK	98,0 a	100,0 a	1264,1 ab (1,5%)	0,3 -	84,9 -	538,8 - (107,4%)	
6 Extract of Urtica spp.	300 L/ha	ABCDEFGHIJK	97,3 a	100,0 a	1204,9 b (6,1%)	0,5 -	77,2 -	490,2 - (97,7%)	
7 Lechithin	0,8 kg/ha	ABCDEFGHIJK	98,0 a	100,0 a	1245,4 b (3,0%)	0,7 -	74,6 -	473,9 - (94,4%)	
8 ChiProPlant	0,3 kg/ha	ABCDEFGHIJK	97,3 a	100,0 a	1215,8 b (5,3%)	0,3 -	77,4 -	491,1 - (97,8%)	
9 Compost tea	600 L/ha	ABCDEFGHIJK	97,3 a	100,0 a	1268,4 ab (1,2%)	0,7 -	70,2 -	445,7 - (88,8%)	
10 Resistim 0-7-11	3 L/ha	ABCDEFGHIJK	77,3 b	95,5 b	977,1 c (23,9%)	0,3 -	73,0 -	463,7 - (92,4%)	
11 Serenade ASO	4 L/ha	ABCDEFGHIJK	97,0 a	100,0 a	1285,4 ab (-0,1%)	1,0 -	77,7 -	493,3 - (98,3%)	
12 Fytosol	4 L/ha	ABCDEFGHIJK	98,8 a	100,0 a	1340,7 ab (-4,5%)	0,0 -	73,2 -	464,8 - (92,6%)	
LSD P=.05			10,96	1,51	122,58		1,42	10,28	65,28
Standard Deviation			7,62	1,05	85,21		0,98	7,09	45,00
CV			8,06	1,05	6,94		151,03	9,41	9,41
Grand Mean			94,46	99,50	1227,02		0,65	75,33	478,29
Levene's F			1,101	2,928	0,397		0,386	0,25	0,25
Levene's Prob(F)			0,389	0,007*	0,948		0,951	0,991	0,991
Rank X2			.	.	.		.	.	.
P(Rank X2)			.	.	.		.	.	.
Skewness			-3,9438*	-3,5386*	-0,9906*		1,2045*	0,114	0,114
Kurtosis			17,4347*	12,7964*	2,3224*		0,3953	-0,6208	-0,6208
Replicate F			2,688	0,505	5,358		0,431	1,235	1,235
Replicate Prob(F)			0,0624	0,6818	0,0041		0,7327	0,3163	0,3163
Treatment F			4,250	6,440	9,368		0,749	1,514	1,514
Treatment Prob(F)			0,0006	0,0001	0,0001		0,6841	0,1838	0,1838

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls). Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL. Missing data estimates are included in columns: Average=10,11,12,13,14,15

Could not calculate LSD (% mean diff) for columns 1 because error mean square = 0.

Bekæmpelse af kartoffelskimmel med alternative midler  
 Trial ID: 20525 Location: Flakkebjerg Trial Year: 2020  
 Protocol ID: 20525 Investigator (Creator): Hans Hansen  
 Project ID: 31220 Study Director: Peter Hartvig  
 Sponsor Contact: KAF

Pest Type			
Pest Code			
Pest Scientific Name			
Pest Name			
Crop Type, Code	C SOLTU	C SOLTU	C SOLTU
BBCH Scale	B POT	B POT	B POT
Crop Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum
Crop Name	Potato	Potato	Potato
Crop Variety	Signum	Signum	Signum
Description			STARCH INCREASE
Rating Date	19-11-18		
SE Group No.	27	30	31
Part Rated	TUBER C	TUBER C	TUBER C
Rating Type	STACON	STARCH	STARCH
Rating Unit	%	HKG/HA	HKG/HA
Sample Size	5 KG	1 ha	1 ha
Collection Basis	1 PLOT	1 PLOT	1 PLOT
Number of Subsamples	1	1	1
Crop Stage Scale	BBCH	BBCH	BBCH
Crop Stage Majority/Min/Max			
Assessed By	Mie		
Days After First/Last Applic.	-581 -581		
Trt-Eval Interval	-581 DA-A		
Plant-Eval Interval	-521 DP-1		
Days After Emergence	-560 DE-1		
ARM Action Codes		T3 APOC	T4
Number of Decimals		2	1
Trt Treatment No. Name	Rate Unit	Appl Code	
1 Ubehandlet			13
2 Kumulus S	6 kg/ha	ABCDEFGHIJK	14
3 Armicarb 85 SP	5 kg/ha	ABCDEFGHIJK	15
4 Serifel	0,5 kg/ha	ABCDEFGHIJK	
5 Extract of Equisetum arvense	300 L/ha	ABCDEFGHIJK	
6 Extract of Urtica spp.	300 L/ha	ABCDEFGHIJK	
7 Lechithin	0,8 kg/ha	ABCDEFGHIJK	
8 ChiProPlant	0,3 kg/ha	ABCDEFGHIJK	
9 Compost tea	600 L/ha	ABCDEFGHIJK	
10 Resistim 0-7-11	3 L/ha	ABCDEFGHIJK	
11 Serenade ASO	4 L/ha	ABCDEFGHIJK	
12 Fytosol	4 L/ha	ABCDEFGHIJK	
LSD P=.05	0,9706	12,623	12,93
Standard Deviation	0,6690	8,700	8,91
CV	3,81	10,36	0,0
Grand Mean	17,5692	83,992	-0,30
Levene's F	0,565	1,233	1,43
Levene's Prob(F)	0,841	0,309	0,211
Rank X2	.	.	.
P(Rank X2)	.	.	.
Skewness	-0,1318	-0,2743	-0,0938
Kurtosis	-0,3009	-0,7299	-0,8436
Replicate F	4,928	1,034	1,688
Replicate Prob(F)	0,0074	0,3933	0,1931
Treatment F	1,724	0,969	0,744
Treatment Prob(F)	0,1213	0,4961	0,6891

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
 Missing data estimates are included in columns: Average=10,11,12,13,14,15

Could not calculate LSD (% mean diff) for columns 1 because error mean square = 0.

Bekæmpelse af kartoffelskimmel med alternative midler  
 Trial ID: 20525 Location: Flakkebjerg Trial Year: 2020  
 Protocol ID: 20525 Investigator (Creator): Hans Hansen  
 Project ID: 31220 Study Director: Peter Hartvig  
 Sponsor Contact: KAF

Pest Type	D Disease	D Disease	D Disease	D Disease	D Disease			
Pest Code	PHYTIN	PHYTIN	PHYTIN	PHYTIN	PHYTIN			
Pest Scientific Name	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans			
Pest Name	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato			
Crop Type, Code	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU			
BBCH Scale	B POT	B POT	B POT	B POT	B POT			
Crop Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum			
Crop Name	Potato	Potato	Potato	Potato	Potato			
Crop Variety	Kuras	Kuras	Kuras	Kuras	Kuras			
Description	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato			
Rating Date	29-7-20	5-8-20	12-8-20	19-8-20	25-8-20			
SE Group No.	1	4	5	6	7			
Part Rated	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C			
Rating Type	PESSEV	PESSEV	PESSEV	PESSEV	PESSEV			
Rating Unit	%	%	%	%	%			
Sample Size	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT			
Collection Basis								
Number of Subsamples	1	1	1	1	1			
Crop Stage Scale	BBCH	BBCH	BBCH	BBCH	BBCH			
Crop Stage Majority/Min/Max	68 - -	69 - -	69 - -	69 - -	69 - -			
Assessed By	IAK	IAK	HHH	HHH	HHH			
Days After First/Last Applic.	37 1	44 1	51 2	58 2	64 1			
Trt-Eval Interval	37 DA-A	44 DA-A	51 DA-A	58 DA-A	64 DA-A			
Plant-Eval Interval	97 DP-1	104 DP-1	111 DP-1	118 DP-1	124 DP-1			
Days After Emergence	58 DE-1	65 DE-1	72 DE-1	79 DE-1	85 DE-1			
ARM Action Codes								
Number of Decimals		3	3	3	3			
Trt Treatment	Rate	Appl						
No. Name	Rate Unit	Code	Plot	1	2	3	4	5
1 Ubehandlet			101 0,0 206 0,0 308 0,0 403 0,0 Mean = 0,0	0,001 0,000 0,000 0,000 0,000	0,002 0,000 0,000 0,000 0,001	0,000 0,000 0,000 0,000 0,000	0,002 0,000 0,000 0,000 0,001	
2 Kumulus S	6 kg/ha	ABCDEFGHIJK	108 0,0 204 0,0 311 0,0 401 0,0 Mean = 0,0	0,000 0,005 0,000 0,000 0,001	0,000 0,005 0,000 0,000 0,001	0,000 0,010 0,000 0,000 0,003	0,000 0,010 0,000 0,000 0,003	
3 Arnicarb 85 SP	5 kg/ha	ABCDEFGHIJK	107 0,0 205 0,0 301 0,0 412 0,0 Mean = 0,0	0,000 0,500 0,000 0,000 0,125	0,000 2,000 0,000 0,000 0,500	0,000 2,000 0,000 0,000 0,500	0,000 2,500 0,000 0,000 0,625	
4 Serifel	0,5 kg/ha	ABCDEFGHIJK	106 0,0 211 0,0 305 0,0 406 0,0 Mean = 0,0	0,005 0,000 0,000 0,000 0,001	0,001 0,000 0,000 0,000 0,000	0,000 0,000 0,000 0,000 0,000	0,000 0,000 0,000 0,000 0,000	
5 Extract of Equisetum arvense	300 L/ha	ABCDEFGHIJK	104 0,0 210 0,0 302 0,0 405 0,0 Mean = 0,0	0,000 0,000 0,000 0,000 0,000	0,000 0,000 0,000 0,001 0,000	0,000 0,000 0,000 0,001 0,000	0,000 0,000 0,000 0,000 0,000	
6 Extract of Urtica spp.	300 L/ha	ABCDEFGHIJK	112 0,0 203 0,0 306 0,0 407 0,0 Mean = 0,0	0,020 0,040 0,000 0,000 0,015	0,020 0,050 0,000 0,000 0,018	0,000 0,050 0,000 0,000 0,013	0,000 0,050 0,000 0,000 0,013	
7 Lechithin	0,8 kg/ha	ABCDEFGHIJK	103 0,0 212 0,0 307 0,0 408 0,0 Mean = 0,0	0,001 0,000 0,000 0,000 0,000	0,001 0,000 0,000 0,000 0,000	0,000 0,000 0,000 0,000 0,000	0,001 0,000 0,000 0,000 0,000	
8 ChiProPlant	0,3 kg/ha	ABCDEFGHIJK	110 0,0 207 0,0 309 0,0 404 0,0 Mean = 0,0	0,000 0,000 0,000 0,000 0,000	0,000 0,000 0,000 0,000 0,000	0,000 0,000 0,000 0,000 0,000	0,000 0,000 0,000 0,000 0,000	
9 Compost tea	600 L/ha	ABCDEFGHIJK	111 0,0 202 0,0 312 0,0 410 0,0 Mean = 0,0	0,020 0,005 0,000 0,000 0,006	0,020 0,010 0,000 0,000 0,008	0,000 0,010 0,000 0,000 0,003	0,000 0,000 0,000 0,000 0,000	
10 Resistim 0-7-11	3 L/ha	ABCDEFGHIJK	105 0,0 209 0,0 304 0,0 409 0,0 Mean = 0,0	0,000 0,000 0,000 0,000 0,000	0,000 0,000 0,000 0,000 0,000	0,000 0,000 0,000 0,000 0,000	0,000 0,000 0,000 0,000 0,000	

Bekæmpelse af kartoffelskimmel med alternative midler		
Trial ID: 20525	Location: Flakkebjerg	Trial Year: 2020
Protocol ID: 20525	Investigator (Creator): Hans Hansen	
Project ID: 31220	Study Director: Peter Hartvig	
	Sponsor Contact: KAF	

Pest Type	D Disease	D Disease	D Disease	D Disease	D Disease
Pest Code	PHYTIN	PHYTIN	PHYTIN	PHYTIN	PHYTIN
Pest Scientific Name	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans
Pest Name	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato
Crop Type, Code	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU
BBCH Scale	B POT	B POT	B POT	B POT	B POT
Crop Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum
Crop Name	Potato	Potato	Potato	Potato	Potato
Crop Variety	Kuras	Kuras	Kuras	Kuras	Kuras
Description	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato
Rating Date	29-7-20	5-8-20	12-8-20	19-8-20	25-8-20
SE Group No.	1	4	5	6	7
Part Rated	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C
Rating Type	PESSEV	PESSEV	PESSEV	PESSEV	PESSEV
Rating Unit	%	%	%	%	%
Sample Size	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Collection Basis					
Number of Subsamples	1	1	1	1	1
Crop Stage Scale	BBCH	BBCH	BBCH	BBCH	BBCH
Crop Stage Majority/Min/Max	68 - -	69 - -	69 - -	69 - -	69 - -
Assessed By	IAK	IAK	HHH	HHH	HHH
Days After First/Last Applic.	37 1	44 1	51 2	58 2	64 1
Trt-Eval Interval	37 DA-A	44 DA-A	51 DA-A	58 DA-A	64 DA-A
Plant-Eval Interval	97 DP-1	104 DP-1	111 DP-1	118 DP-1	124 DP-1
Days After Emergence	58 DE-1	65 DE-1	72 DE-1	79 DE-1	85 DE-1
ARM Action Codes					
Number of Decimals		3	3	3	3
Trt Treatment	Rate Appl				
No. Name	Rate Unit Code Plot <td>1</td> <td>2</td> <td>3</td> <td>4</td>	1	2	3	4
11 Serenade ASO	4 L/ha ABCDEFGHIJK 109	0,0	0,005	0,001	0,000
	208	0,0	0,005	0,010	0,010
	310	0,0	0,000	0,010	0,000
	411	0,0	0,000	0,000	0,000
	Mean =	0,0	0,003	0,005	0,005
12 Fytosol	4 L/ha ABCDEFGHIJK 102	0,0	0,010	0,001	0,000
	201	0,0	0,010	0,020	0,000
	303	0,0	0,000	0,000	0,000
	402	0,0	0,000	0,000	0,000
	Mean =	0,0	0,005	0,005	0,000

Bekæmpelse af kartoffelskimmel med alternative midler  
 Trial ID: 20525 Location: Flakkebjerg Trial Year: 2020  
 Protocol ID: 20525 Investigator (Creator): Hans Hansen  
 Project ID: 31220 Study Director: Peter Hartvig  
 Sponsor Contact: KAF

Pest Type	D Disease	D Disease	D Disease	D Disease	D Disease
Pest Code	PHYTIN	PHYTIN	PHYTIN	PHYTIN	PHYTIN
Pest Scientific Name	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans
Pest Name	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato
Crop Type, Code	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU
BBCH Scale	B POT	B POT	B POT	B POT	B POT
Crop Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum
Crop Name	Potato	Potato	Potato	Potato	Potato
Crop Variety	Kuras	Kuras	Kuras	Kuras	Kuras
Description	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato
Rating Date	3-9-20	9-9-20	17-9-20	18-11-20	18-11-20
SE Group No.	8	9	10	11	11
Part Rated	PLANT C	PLANT C	PLANT C	PLANT C	TUBER C
Rating Type	PESSEV	PESSEV	PESSEV	PESSEV	PESINC
Rating Unit	%	%	%	AUDPC	PERCENT
Sample Size	1 PLOT	1 PLOT	1 PLOT	1 PLOT	100 TUBER
Collection Basis					1 PLOT
Number of Subsamples	1	1	1	1	1
Crop Stage Scale	BBCH	BBCH	BBCH	BBCH	BBCH
Crop Stage Majority/Min/Max	69 - -	69 - -	91 - -	68 - -	99 - -
Assessed By	HHH	HHH	HHH	HHH	Mie
Days After First/Last Applic.	73 3	79 2	87 10	87 10	149 72
Trt-Eval Interval	73 DA-A	79 DA-A	87 DA-A	87 DA-A	209 DP-1
Plant-Eval Interval	133 DP-1	139 DP-1	147 DP-1	147 DP-1	170 DE-1
Days After Emergence	94 DE-1	100 DE-1	108 DE-1	108 DE-1	
ARM Action Codes				T1 AUDPC APC	
Number of Decimals	1			1	
Trt Treatment	Rate Appl				
No. Name	Rate Unit Code Plot	6	7	8	9
1 Ubehandlet	101 20,0 206 30,0 308 28,0 403 32,0 Mean = 27,5	95,0 98,0 100,0 97,0 100,0 96,8	100,0 100,0 100,0 100,0 100,0 100,0	1215,0 1311,0 1289,0 1319,0 1283,5	0,0 1,0 3,0 1,0 1,3
2 Kumulus S	6 kg/ha ABCDEFGHIJK 108 204 3,0 311 8,0 401 5,0 401 8,0 Mean = 6,0	40,0 90,0 90,0 93,0 78,3	97,0 100,0 98,0 99,0 98,5	690,5 1090,2 1059,5 1107,0 986,8	2,0 0,0 0,0 0,0 0,5
3 Armicarb 85 SP	5 kg/ha ABCDEFGHIJK 107 205 40,0 301 45,0 412 50,0 38,0 Mean = 43,3	100,0 100,0 100,0 100,0 99,0	100,0 100,0 100,0 100,0 100,0	1400,0 1486,8 1475,0 1378,0	1,0 1,0 2,0 Excluded because of flooding 1,3
4 Serifel	0,5 kg/ha ABCDEFGHIJK 106 211 10,0 305 25,0 406 25,0 406 10,0 Mean = 17,5	96,0 99,0 100,0 97,0 98,0	100,0 100,0 100,0 100,0 100,0	1147,0 1280,5 1287,5 1154,0 1217,3	0,0 3,0 0,0 1,0 1,0
5 Extract of Equisetum arvense	300 L/ha ABCDEFGHIJK 104 210 15,0 302 40,0 405 30,0 405 10,0 Mean = 23,8	98,0 99,0 100,0 100,0 95,0 98,0	100,0 100,0 100,0 100,0 100,0	1198,5 1393,0 1325,0 1140,0 1264,1	Excluded because of flooding 0,0 1,0 0,0 0,3
6 Extract of Urtica spp.	300 L/ha ABCDEFGHIJK 112 203 15,0 306 10,0 407 33,0 407 8,0 Mean = 16,5	97,0 98,0 100,0 94,0 97,3	100,0 100,0 100,0 100,0 100,0	1191,8 1162,3 1347,5 1118,0 1204,9	0,0 2,0 0,0 0,0 0,5
7 Lechithin	0,8 kg/ha ABCDEFGHIJK 103 212 20,0 307 25,0 408 15,0 Mean = 21,3	97,0 99,0 100,0 100,0 96,0 98,0	100,0 100,0 100,0 100,0 100,0	1229,0 1280,5 1287,5 1184,5 1245,4	Excluded because of flooding 0,0 0,0 2,0 0,7
8 ChiProPlant	0,3 kg/ha ABCDEFGHIJK 110 207 7,0 309 20,0 404 33,0 404 12,0 Mean = 18,0	96,0 98,0 98,0 97,0 97,3	100,0 100,0 100,0 100,0 100,0	1124,5 1236,0 1333,5 1169,0 1215,8	0,0 1,0 0,0 0,0 0,3
9 Compost tea	600 L/ha ABCDEFGHIJK 111 202 15,0 312 20,0 410 15,0 410 50,0 Mean = 25,0	97,0 97,0 97,0 98,0	100,0 100,0 100,0 100,0	1191,8 1229,2 1191,5 1461,0	0,0 0,0 2,0 Excluded because of flooding 0,7
10 Resistim 0-7-11	3 L/ha ABCDEFGHIJK 105 209 5,0 304 8,0 409 8,0 409 8,0 Mean = 7,3	62,0 85,0 85,0 77,0 77,3	100,0 95,0 95,0 92,0 95,5	871,5 1035,0 1035,0 967,0 977,1	0,0 0,0 1,0 0,0 0,3

Bekæmpelse af kartoffelskimmel med alternative midler  
 Trial ID: 20525 Location: Flakkebjerg Trial Year: 2020  
 Protocol ID: 20525 Investigator (Creator): Hans Hansen  
 Project ID: 31220 Study Director: Peter Hartvig  
 Sponsor Contact: KAF

Pest Type	D Disease	D Disease	D Disease	D Disease	D Disease	
Pest Code	PHYTIN	PHYTIN	PHYTIN	PHYTIN	PHYTIN	
Pest Scientific Name	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	
Pest Name	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato	
Crop Type, Code	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU	
BBCH Scale	B POT	B POT	B POT	B POT	B POT	
Crop Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	
Crop Name	Potato	Potato	Potato	Potato	Potato	
Crop Variety	Kuras	Kuras	Kuras	Kuras	Kuras	
Description	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	
Rating Date	3-9-20	9-9-20	17-9-20		18-11-20	
SE Group No.	8	9	10	11	11	
Part Rated	PLANT C	PLANT C	PLANT C	PLANT C	TUBER C	
Rating Type	PESSEV	PESSEV	PESSEV		PESINC	
Rating Unit	%	%	%	AUDPC	PERCENT	
Sample Size	1 PLOT	1 PLOT	1 PLOT	1 PLOT	100 TUBER	
Collection Basis					1 PLOT	
Number of Subsamples	1	1	1	1	1	
Crop Stage Scale	BBCH	BBCH	BBCH	BBCH	BBCH	
Crop Stage Majority/Min/Max	69 - -	69 - -	91 - -	68 - -	99 - -	
Assessed By	HHH	HHH	HHH		Mie	
Days After First/Last Applic.	73 3	79 2	87 10		149 72	
Trt-Eval Interval	73 DA-A	79 DA-A	87 DA-A			
Plant-Eval Interval	133 DP-1	139 DP-1	147 DP-1		209 DP-1	
Days After Emergence	94 DE-1	100 DE-1	108 DE-1		170 DE-1	
ARM Action Codes				T1 AUDPC APC		
Number of Decimals	1			1		
Trt Treatment	Rate Appl					
No. Name	Rate Unit Code Plot					
11 Serenade ASO	4 L/ha ABCDEFGHIJK 109	25,0	95,0	100,0	1252,5	1,0
		30,0	99,0	100,0	1318,2	2,0
		310	97,0	100,0	1229,1	0,0
		411	97,0	100,0	1341,5	
	Mean =	27,5	97,0	100,0	1285,4	Excluded because of flooding
12 Fytosol	4 L/ha ABCDEFGHIJK 102	25,0	98,0	100,0	1273,6	Excluded because of flooding
		201	99,0	100,0	1280,7	0,0
		303	100,0	100,0	1475,0	0,0
		402	98,0	100,0	1333,5	0,0
	Mean =	33,3	98,8	100,0	1340,7	0,0

Bekæmpelse af kartoffelskimmel med alternative midler  
 Trial ID: 20525 Location: Flakkebjerg Trial Year: 2020  
 Protocol ID: 20525 Investigator (Creator): Hans Hansen  
 Project ID: 31220 Study Director: Peter Hartvig  
 Sponsor Contact: KAF

Pest Type					
Pest Code					
Pest Scientific Name					
Pest Name					
Crop Type, Code	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU
BBCH Scale	BPOT	BPOT	BPOT	BPOT	BPOT
Crop Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum
Crop Name	Potato	Potato	Potato	Potato	Potato
Crop Variety	Signum	Signum	Signum	Signum	Signum
Description	YIELD, kg/plot	YIELD HKG/HA	YIELD HKG/HA	YIELD HKG/HA	STARCH INCREASE
Rating Date	16-10-18	16-10-18	19-11-18		
SE Group No.	13	26	27	30	31
Part Rated	TUBER C	TUBER C	TUBER C	TUBER C	TUBER C
Rating Type	YIELD	YIELD	STARCH	STARCH	STARCH
Rating Unit	KG/PLOT	HKG/HA	%	HKG/HA	HKG/HA
Sample Size	15,75 m2	1 ha	5 KG	1 ha	1 ha
Collection Basis	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Number of Subsamples	1	1	1	1	1
Crop Stage Scale	BBCH	BBCH	BBCH	BBCH	BBCH
Crop Stage Majority/Min/Max					
Assessed By	PEA		Mie		
Days After First/Last Applic.	-615 -615	-615 -615	-581 -581		
Trt-Eval Interval	-615 DA-A	-615 DA-A	-581 DA-A		
Plant-Eval Interval	-555 DP-1	-555 DP-1	-521 DP-1		
Days After Emergence	-594 DE-1	-594 DE-1	-560 DE-1		
ARM Action Codes		TY2 APOC		T3 APOC	T4
Number of Decimals	1	1		2	1
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code	Plot	11	12
1 Ubehandlet			101	82,4	523,2
			206	79,0	501,6
			308	73,9	469,2
			403	80,9	513,7
			Mean =	79,1	501,9
2 Kumulus S	6 kg/ha	ABCDEFGHIJK	108	77,6	492,7
			204	77,4	491,4
			311	67,5	428,6
			401	70,3	446,3
			Mean =	73,2	464,8
3 Armicarb 85 SP	5 kg/ha	ABCDEFGHIJK	107	62,7	398,1
			205	68,4	434,3
			301	73,7	467,9
			412		
			Mean =	68,3	433,4
				Excluded because of flooding	Excluded because of flooding
4 Serifel	0,5 kg/ha	ABCDEFGHIJK	106	71,5	454,0
			211	90,1	572,1
			305	68,0	431,7
			406	71,5	454,0
			Mean =	75,3	477,9
5 Extract of Equisetum arvense	300 L/ha	ABCDEFGHIJK	104	Excluded because of flooding	Excluded because of flooding
			210	87,6	556,2
			302	88,4	561,3
			405	78,6	499,0
			Mean =	84,9	538,8
				Excluded because of flooding	Excluded because of flooding
6 Extract of Urtica spp.	300 L/ha	ABCDEFGHIJK	112	70,6	448,3
			203	77,3	490,8
			306	84,6	537,1
			407	76,3	484,4
			Mean =	77,2	490,2
				Excluded because of flooding	Excluded because of flooding
7 Lechithin	0,8 kg/ha	ABCDEFGHIJK	103	Excluded because of flooding	Excluded because of flooding
			212	85,1	540,3
			307	67,7	429,8
			408	71,1	451,4
			Mean =	74,6	473,9
				Excluded because of flooding	Excluded because of flooding
8 ChiProPlant	0,3 kg/ha	ABCDEFGHIJK	110	69,4	440,6
			207	81,8	519,4
			309	78,3	497,1
			404	79,9	507,3
			Mean =	77,4	491,1
				Excluded because of flooding	Excluded because of flooding
9 Compost tea	600 L/ha	ABCDEFGHIJK	111	79,0	501,6
			202	59,8	379,7
			312	71,8	455,9
			410		
			Mean =	70,2	445,7
				Excluded because of flooding	Excluded because of flooding
10 Resistim 0-7-11	3 L/ha	ABCDEFGHIJK	105	70,3	446,3
			209	87,7	556,8
			304	68,5	434,9
			409	65,6	416,5
			Mean =	73,0	463,7
				Excluded because of flooding	Excluded because of flooding



Bekæmpelse af kartoffelskimmel med alternative midler					
Trial ID: 20525		Location: Flakkebjerg		Trial Year: 2020	
Protocol ID: 20525		Investigator (Creator): Hans Hansen			
Project ID: 31220		Study Director: Peter Hartvig			
Sponsor Contact: KAF					

Pest Type	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU
Pest Code	BPOT	BPOT	BPOT	BPOT	BPOT
Pest Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum
Pest Name	Potato	Potato	Potato	Potato	Potato
Crop Type, Code	Signum	Signum	Signum	Signum	Signum
BBCH Scale	YIELD, kg/plot	YIELD HKG/HA	YIELD HKG/HA	YIELD HKG/HA	STARCH INCREASE
Crop Scientific Name	16-10-18	16-10-18	19-11-18	30	31
Crop Name	13	26	27		
Crop Variety	TUBER C	TUBER C	TUBER C	TUBER C	TUBER C
Description	YIELD	YIELD	STARCH	STARCH	STARCH
Rating Date	KG/PLOT	HKG/HA	%	HKG/HA	HKG/HA
SE Group No.	15,75 m2	1 ha	5 KG	1 ha	1 ha
Part Rated	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Rating Type	1	1	1	1	1
Rating Unit	BBCH	BBCH	BBCH	BBCH	BBCH
Sample Size					
Collection Basis					
Number of Subsamples					
Crop Stage Scale					
Crop Stage Majority/Min/Max					
Assessed By	PEA		Mie		
Days After First/Last Applic.	-615 -615	-615 -615	-581 -581		
Trt-Eval Interval	-615 DA-A	-615 DA-A	-581 DA-A		
Plant-Eval Interval	-555 DP-1	-555 DP-1	-521 DP-1		
Days After Emergence	-594 DE-1	-594 DE-1	-560 DE-1		
ARM Action Codes		TY2 APOC		T3 APOC	T4
Number of Decimals	1	1		2	1
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code	Plot		
			11	12	13
			14	15	
11 Serenade ASO	4 L/ha	ABCDEFGHIJK	109		
			208	476,8	17,660
			310	507,9	16,500
			411	495,2	17,410
			Mean =	77,7	17,190
			Excluded because of flooding	Excluded because of flooding	Excluded because of flooding
				493,3	84,75
12 Fytosol	4 L/ha	ABCDEFGHIJK	102		
			201	476,8	17,780
			303	421,6	16,290
			402	525,1	18,600
			Mean =	73,2	17,557
			Excluded because of flooding	Excluded because of flooding	Excluded because of flooding
				464,8	81,98
					79,59
					68,68
					97,66
					81,98
					-3,5
					-13,7
					6,7
					-3,5

Bekæmpelse af kartoffelskimmel med alternative strategier				
Trial ID: 20526		Location: Flakkebjerg		Trial Year: 2020
Protocol ID: 20526		Investigator (Creator): Hans Hansen		
Project ID:		Study Director: Peter Hartvig		
Official Trial ID: 20526		Sponsor Contact: KAF		

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	Appl Description
1	Untreated				
2	Ranman Top	0,25	L/ha	ACEGIKMOQSUW	7 days interval
3	Ranman Top	0,5	L/ha	ACEGIKMOQSUW	7 days interval
4	AgriCHOS	2,0	L/ha	ACEGIKMOQSUW	7 days interval
5	Resistim	3,0	L/ha	ACEGIKMOQSUW	7 days interval
6	Ranman Top AgriCHOS	0,5 2,0	L/ha L/ha	ACEGIK MOQSUW	7 days interval 7 days interval
7	Ranman Top AgriCHOS	0,25 1,0	L/ha L/ha	ACEGIKMOQSUW BDFHJLNPRTVX	7 days interval 7 days interval
8	Ranman Top Resistim	0,5 3,0	L/ha L/ha	ACEGIK MOQSUW	7 days interval 7 days interval
9	Ranman Top Resistim	0,25 1,5	L/ha L/ha	ACEGIKMOQSUW BDFHJLNPRTVX	7 days interval 7 days interval
10	AgriCHOS Ranman Top	2,0 0,5	L/ha L/ha	ACEGIK MOQSUW	7 days interval 7 days interval
11	Resistim Ranman Top	3,0 0,5	L/ha L/ha	ACEGIK MOQSUW	7 days interval 7 days interval
12	Resistim Proxanil Ranman Top	3,0 2,5 0,5	L/ha L/ha L/ha	ACEGIK MO OQSUW	7 days interval 7 days interval 7 days interval

Bekæmpelse af kartoffelskimmel med alternative strategier  
 Trial ID: 20526 Location: Flakkebjerg Trial Year: 2020  
 Protocol ID: 20526 Investigator (Creator): Hans Hansen  
 Project ID: Study Director: Peter Hartvig  
 Official Trial ID: 20526 Sponsor Contact: KAF

**General Trial Information**

**Study Director:** Peter Hartvig **Title:** Study director  
**Investigator:** Hans Hansen **Title:** Fieldmanager

**Discipline:** F fungicide  
**Trial Status:** I one-year/interim **Trial Reliability:** GOOD good quality  
**Initiation Date:** 10-6-20  
**Completion Date:** 31-12-20

**Trial Location**

**City:** Slagelse **Country:** DNK Denmark  
**State/Prov.:** Region Sjælland  
**Postal Code:** 4200 **Climate Zone:** EPOMAR EPPO Maritime

**Latitude of LL Corner °:** 53,319227 N  
**Longitude of LL Corner °:** 11,388009 E

**Conducted Under GLP:** No **Official Trial ID:** 20526  
**Conducted Under GEP:** No

No.	Guideline	Discipline	Description
1.	PP 1/2(4)	F	Phytophthora infestans on potato
2.	PP 1/135(3)	GS	Phytotoxicity assessment
3.	PP 1/152(3)	GS	Design and analysis of efficacy evaluation trials
4.	PP 1/181(3)	GS	Conduct and reporting of efficacy evaluation trials including GEP

**Contacts**

**Role:** STYDIR study director  
**Study Director:** Peter Hartvig **Title:** Study director  
**Organization:** Aarhus University, Department of Agroecology  
**Address 1:** Forsøgsvej 1, Flakkebjerg **Phone No.:** +45 87 15 82 03 **Mobile No.:** +45 22 28 33 01  
**Country:** DNK Denmark **E-mail:** peter.har@agro.au.dk  
**City:** Slagelse, Denmark **Postal Code:** DK-4200

**Role:** INVEST investigator  
**Investigator:** Hans Hansen **Title:** Fieldmanager  
**Organization:** Aarhus University, Department of Agroecology  
**Address 1:** Forsøgsvej 1 **Mobile No.:** +45 22283356  
**Country:** DNK Denmark **E-mail:** hansH.hansen@agro.au.dk  
**City:** Slagelse **Postal Code:** 4200

**Role:** SPONSR sponsor  
**Sponsor:** KAF  
**Organization:** Kartoffelafgiftsfonden  
**Address 1:** Axeltorv 3  
**Country:** DNK Denmark **State/Prov:** 84 **Postal Code:** 1609  
**City:** København

**Crop Description**

**Crop 1:** C SOLTU Solanum Tuberosum Potato **Stage Scale:** BBCH **BBCH Scale:** BPOT  
**Variety:** Kuras  
**Attributes:** Late susceptible starc variety  
**Planting Date:** 23-4-20 **Planting Rate:** 3 P/m  
**Depth:** 15 cm  
**Rows per Plot:** 5 **Planting Method:** TRAMAC transplanted - machine  
**Row Spacing:** 75 cm **Planting Equipment:** MT transplanter, mechanical  
**Spacing within Row:** 33 cm **Seed Bed:** MEDIUM medium  
**Soil Moisture:** SLIWET slightly wet, moist  
**Emergence Date:** 1-6-20  
**Harvest Date:** 13-10-20 **Harvest Equipment:** ASA-LIFT KT 100  
**Harvested Width:** 2,25 m  
**Harvested Length:** 7 m

**Pest Description**

**Pest 1 Type:** D **Code:** PHYTIN Phytophthora infestans  
**Common Name:** Late blight of potato **Stage Scale:** BBCH  
**Establishment Date:** 1-7-20  
**Establishment Rate:** 0,5 l pr plant  
**Concentration:** 10000 spores pr. ml  
**Establishment Method/Description:** Spraying  
**Crop:** 1 SOLTU **Stage at Infestation:** 63

**Site and Design**

**Treated Plot Width:** 3,75 m **Site Type:** FIELD field  
**Treated Plot Length:** 7 m **Experimental Unit:** 48 PLOT plot  
**Treated Plot Area:** 26,25 m<sup>2</sup> **Treatments:** 12 **Tillage Type:** CONTIL conventional-till  
**Replications:** 4 **Study Design:** RACOB� Randomized Complete Block (RCB)

**Maintenance**

No.	Date	Type	Maintenance Product Name	Rate	Rate Unit
1.	21-7-20	FUNG	Narita	0,4	L/HA
2.	4-8-20	FUNG	Propulse	0,45	L/HA
3.	18-8-20	FUNG	Narita	0,4	L/HA
4.	1-9-20	FUNG	Propulse	0,45	L/HA

Bekæmpelse af kartoffelskimmel med alternative strategier  
 Trial ID: 20526 Location: Flakkebjerg Trial Year: 2020  
 Protocol ID: 20526 Investigator (Creator): Hans Hansen  
 Project ID: Study Director: Peter Hartvig  
 Official Trial ID: 20526 Sponsor Contact: KAF

**Soil Description**  
**Description Name:** F 33  
**% Sand:** 75 **% OM:** 1,8 **Texture:** FCL fine clay loam  
**% Silt:** 11 **pH:** 7,6 **Soil Name:** JB 6  
**% Clay:** 12 **Fert. Level:** E excellent  
**Soil Drainage:** F fair

**Weather Conditions**  
**Overall Moisture Conditions:** DRWEDR dry-wet-dry  
**Closest Weather Station:** DMI Flakkebjerg **Distance:** 500 m

No.	Date	Moisture Total	Unit	Type	Type Description
1.	30-6-20	25	mm	SPLAMO	sprinkler - lateral move
2.	21-7-20	25	mm	SPLAMO	sprinkler - lateral move
3.	4-8-20	25	mm	SPLAMO	sprinkler - lateral move
4.	18-8-20	25	mm	SPLAMO	sprinkler - lateral move

**Application Description**

	A	B	C	D	E	F	G	H	I	J
<b>Application Date</b>	22-6-20	26-6-20	29-6-20	2-7-20	9-7-20	12-7-20	13-7-20	16-7-20	20-7-20	23-7-20
<b>Appl. Start Time</b>	19:45	11:30	14:00	15:00	19:30	14:00	16:00	11:30	15:30	19:45
<b>Appl. Stop Time</b>	20:30	11:45	14:45	15:15	20:15	14:15	16:45	11:45	16:30	2:00
<b>Application Method</b>	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
<b>Application Placement</b>	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR
<b>Applied By</b>	HHH	HHH	HHH	HHH	HHH	HHH	HHH	HHH	HHH	HHH
<b>Air Temperature Start, Stop</b>	19,6 17,4	25,6 26	21,3 21,4	18,6 18,9	15,8 14,5	16,6 15,6	18 18,8	17,4 18,2	20 20	16,4 18,1
<b>% Relative Humidity Start, Stop</b>	60,3 68,9	63,5 65,4	48,6 46,1	73,5 72,2	75,4 82,7	72,6 76,2	62,7 62,5	76,6 71,6	52,9 54,4	71,9 77,1
<b>Wind Velocity+Dir. Start</b>	3,64 MPS NW	0,77 MPS S	2,93 MPS SW	1,85 MPS NW	1,2 MPS W	2,94 MPS W	2,9 MPS W	3,21 MPS NNW	4,17 MPS W	2,87 MPS W
<b>Wind Velocity+Dir. Stop</b>	3,73 MPS NW	0,77 MPS S	2,93 MPS SSW	2,67 MPS NW	0,49 MPS W	4,27 MPS W	1,83 MPS W	2,35 MPS NNW	4,17 MPS W	2,14 MPS W
<b>Wet Leaves (Y/N)</b>	N no	N no	N no	N no	N no	N no	N no	N no	N no	N no
<b>% Cloud Cover</b>	5	5	10	75	10	95	15	35	45	75

	K	L	M	N	O	P	Q	R	S	T	U
<b>Application Date</b>	28-7-20	30-7-20	4-8-20	6-8-20	11-8-20	13-8-20	17-8-20	20-8-20	24-8-20	27-8-20	31-8-20
<b>Appl. Start Time</b>	14:30	15:30	18:00	9:00	17:00	9:30	14:00	8:00	12:45	14:45	17:00
<b>Appl. Stop Time</b>	15:30	16:00	18:30	9:30	17:45	10:00	15:00	8:30	13:45	15:15	18:00
<b>Application Method</b>	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
<b>Application Placement</b>	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR	FOLIAR
<b>Applied By</b>	JHP	JHP	JHP	JHP	HHH	TNJ	HHH	HHH	HHH	HHH	HHH
<b>Air Temperature Start, Stop</b>	20,8 20,6	18,3 18,5	20,3 19,9	22,9 25,2	25,7 25,1	21,4 24,5	29,9 29,5	19 20,2	18 18,7	14,5 15,2	18,7 17,9
<b>% Relative Humidity Start, Stop</b>	57,3 56,6	62,7 61,3	56,7 55,4	60,1 49,3	54,1 54,1	71,7 53,9	30 30	91,2 87,6	67,2 64,5	95,5 93,1	46,9 55
<b>Wind Velocity+Dir. Start</b>	4,74 MPS W	4,37 MPS W	2,94 MPS W	1,29 MPS SSW	1,29 MPS SE	0,72 MPS SE	0,88 MPS SE	0 MPS SE	1,24 MPS NNW	1,75 MPS N	0 MPS N
<b>Wind Velocity+Dir. Stop</b>	4,74 MPS W	4,58 MPS W	2,54 MPS W	1,29 MPS SSW	1,41 MPS SE	0,72 MPS SE	0,84 MPS SE	0,2 MPS SE	1,99 MPS NNW	2,83 MPS N	0 MPS N
<b>Wet Leaves (Y/N)</b>	N no	N no	N no	N no	N no	N no	N no	N no	N no	N no	N no
<b>% Cloud Cover</b>	0	0	0	0	50	0	0	95	25	95	0

	V	W	X
<b>Application Date</b>	3-9-20	7-9-20	10-9-20
<b>Appl. Start Time</b>	11:00	11:00	11:00
<b>Appl. Stop Time</b>	10:15	12:00	11:30
<b>Application Method</b>	SPRAY	SPRAY	SPRAY
<b>Application Placement</b>	FOLIAR	FOLIAR	FOLIAR
<b>Applied By</b>	HHH	TNJ	TNJ
<b>Air Temperature Start, Stop</b>	18,3 18,5	15,3 15,9	14,8 15,3
<b>% Relative Humidity Start, Stop</b>	64 66,7	71,9 68,7	75 74,6
<b>Wind Velocity+Dir. Start</b>	0 MPS W	3,86 MPS NW	5,95 MPS NW
<b>Wind Velocity+Dir. Stop</b>	0 MPS W	2,86 MPS NW	4,25 MPS NW
<b>Wet Leaves (Y/N)</b>	N no	N no	N no
<b>% Cloud Cover</b>	35	100	30



Bekæmpelse af kartoffelskimmel med alternative strategier											
Trial ID: 20526			Location: Flakkebjerg			Trial Year: 2020					
Protocol ID: 20526			Investigator (Creator): Hans Hansen								
Project ID:			Study Director: Peter Hartvig								
Official Trial ID: 20526			Sponsor Contact: KAF								

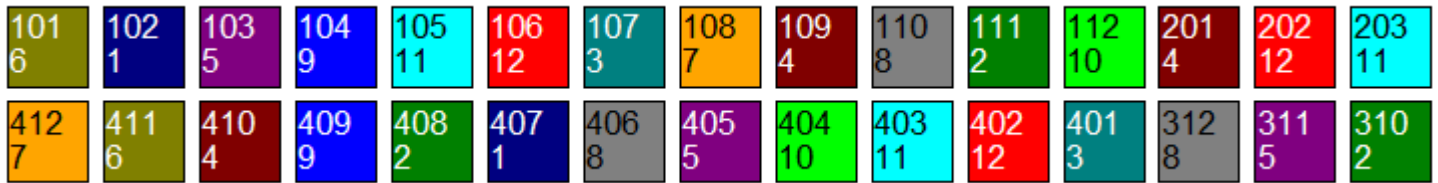
	N	O	P	Q	R	S	T	U	V	W	X
<b>Appl. Equipment</b>	Sprayer	Sprayer	Sprayer	Sprayer	Sprayer	Sprayer	Sprayer	Sprayer	Sprayer	Sprayer	Sprayer
<b>Equipment Type</b>	SPRAYE	SPRAYE	SPRAYE	SPRAYE	SPRAYE	SPRAYE	SPRAYE	SPRAYE	SPRAYE	SPRAYE	SPRAYE
<b>Operation Pressure</b>	3 Bar	3 Bar	3 Bar	3 Bar	3 Bar	3 Bar	3 Bar	3 Bar	3 Bar	3 Bar	3 Bar
<b>Nozzle Type</b>	Low drift	Low drift	Low drift	Low drift	Low drift	Low drift	Low drift	Low drift	Low drift	Low drift	Low drift
<b>Nozzle Size</b>	ISO 025	ISO 025	ISO 025	ISO 025	ISO 025	ISO 025	ISO 025	ISO 025	ISO 025	ISO 025	ISO 025
<b>Nozzle Spacing</b>	50 cm	50 cm	50 cm	50 cm	50 cm	50 cm	50 cm	50 cm	50 cm	50 cm	50 cm
<b>% Coverage</b>	100	100	100	100	100	100	100	100	100	100	100
<b>Boom Length</b>	375 m	375 m	375 m	375 m	375 m	375 m	375 m	375 m	375 m	375 m	375 m
<b>Boom Height</b>	50 cm	50 cm	50 cm	50 cm	50 cm	50 cm	50 cm	50 cm	50 cm	50 cm	50 cm
<b>Ground Speed</b>	4 Km/h	4 Km/h	4 Km/h	4 Km/h	4 Km/h	4 Km/h	4 Km/h	4 Km/h	4 Km/h	4 Km/h	4 Km/h
<b>Carrier</b>	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
<b>Application Amount</b>	300 L/ha	300 L/ha	300 L/ha	300 L/ha	300 L/ha	300 L/ha	300 L/ha	300 L/ha	300 L/ha	300 L/ha	300 L/ha
<b>Mix Overage</b>											
<b>Mix Size</b>	7,5 l	7,5 l	7,5 l	7,5 l	7,5 l	7,5 l	7,5 l	7,5 l	7,5 l	7,5 l	7,5 l
<b>Propellant</b>	COMAIR	COMAIR	COMAIR	COMAIR	COMAIR	COMAIR	COMAIR	COMAIR	COMAIR	COMAIR	COMAIR
<b>Tank Mix (Y/N)</b>	Y yes	Y yes	Y yes	Y yes	Y yes	Y yes	Y yes	Y yes	Y yes	Y yes	Y yes

Context	Date	By	Notes
STATUS	4-6-20	Hans Hansen	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	10-6-20	Hans Hansen	Automatically added by ARM: Trial Status updated to 'E' when Initiation Date entered.

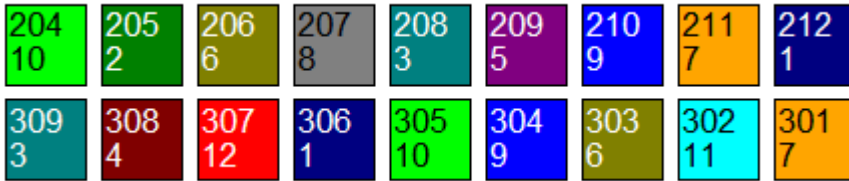
Bekæmpelse af kartoffelskimmel med alternative strategier		
Trial ID: 20526	Location: Flakkebjerg	Trial Year: 2020
Protocol ID: 20526	Investigator (Creator): Hans Hansen	
Project ID:	Study Director: Peter Hartvig	
Official Trial ID: 20526	Sponsor Contact: KAF	

**Trial Map Treatment Description**

Trt	Code	Description
1	CHK	Untreated
2		Ranman Top 0.25 L/ha
3		Ranman Top 0.5 L/ha
4		AgriCHOS 2.0 L/ha
5		Resistim 3.0 L/ha
6		Ranman Top 0.5 L/ha;AgriCHOS 2.0 L/ha
7		Ranman Top 0.25 L/ha;AgriCHOS 1.0 L/ha
8		Ranman Top 0.5 L/ha;Resistim 3.0 L/ha
9		Ranman Top 0.25 L/ha;Resistim 1.5 L/ha
10		AgriCHOS 2.0 L/ha;Ranman Top 0.5 L/ha
11		Resistim 3.0 L/ha;Ranman Top 0.5 L/ha
12		Resistim 3.0 L/ha;Proxanil 2.5 L/ha;Ranman Top 0.5 L/ha



Additional section below is at right of previous section.



Bekæmpelse af kartoffelskimmel med alternative strategier  
 Trial ID: 20526 Location: Flakkebjerg Trial Year: 2020  
 Protocol ID: 20526 Investigator (Creator): Hans Hansen  
 Project ID: Study Director: Peter Hartvig  
 Official Trial ID: 20526 Sponsor Contact: KAF

Pest Type Pest Code Pest Scientific Name Pest Name Crop Type, Code BBCH Scale Crop Scientific Name  Crop Name Crop Variety Description Rating Date Part Rated Rating Type Rating Unit Sample Size Collection Basis Number of Subsamples Crop Stage Scale Crop Stage Majority/Min/Max Assessed By Days After First/Last Applic. Trt-Eval Interval Plant-Eval Interval Days After Emergence ARM Action Codes Number of Decimals	D Disease PHYTIN Phytophthora infestans Late blight of potato C SOLTU B POT Solanum tuberosum  Potato Kuras Late Starch potato 29-7-20 PLANT - PESSEV % 1 PLOT	D Disease PHYTIN Phytophthora infestans Late blight of potato C SOLTU B POT Solanum tuberosum  Potato Kuras Late Starch potato 5-8-20 PLANT - PESSEV % 1 PLOT	D Disease PHYTIN Phytophthora infestans Late blight of potato C SOLTU B POT Solanum tuberosum  Potato Kuras Late Starch potato 12-8-20 PLANT - PESSEV % 1 PLOT	D Disease PHYTIN Phytophthora infestans Late blight of potato C SOLTU B POT Solanum tuberosum  Potato Kuras Late Starch potato 19-8-20 PLANT - PESSEV % 1 PLOT	D Disease PHYTIN Phytophthora infestans Late blight of potato C SOLTU B POT Solanum tuberosum  Potato Kuras Late Starch potato 26-8-20 PLANT - PESSEV % 1 PLOT	D Disease PHYTIN Phytophthora infestans Late blight of potato C SOLTU B POT Solanum tuberosum  Potato Kuras Late Starch potato 3-9-20 PLANT - PESSEV % 1 PLOT
Trt Treatment No. Name Rate Appl Unit Code	1	2	3	4	5	6
1 Untreated	0,0 -	0,000 -	0,000 -	0,000 -	0,225 -	30,5 a
2 Ranman Top 0,25 L/ha ACEGIKMOQS UW	0,0 -	0,001 -	0,003 -	0,003 -	0,000 -	0,2 b
3 Ranman Top 0,5 L/ha ACEGIKMOQS UW	0,0 -	0,000 -	0,000 -	0,000 -	0,000 -	0,1 b
4 AgriCHOS 2,0 L/ha ACEGIKMOQS UW	0,0 -	0,000 -	0,003 -	0,003 -	0,015 -	17,5 b
5 Resistim 3,0 L/ha ACEGIKMOQS UW	0,0 -	0,000 -	0,000 -	0,000 -	0,000 -	10,3 b
6 Ranman Top 0,5 L/ha ACEGIK AgriCHOS 2,0 L/ha MOQS UW	0,0 -	0,000 -	0,000 -	0,000 -	0,000 -	3,5 b
7 Ranman Top 0,25 L/ha ACEGIKMOQS UW AgriCHOS 1,0 L/ha BDFHJLNPR TVX	0,0 -	0,000 -	0,000 -	0,000 -	0,000 -	0,0 b
8 Ranman Top 0,5 L/ha ACEGIK Resistim 3,0 L/ha MOQS UW	0,0 -	0,000 -	0,000 -	0,000 -	0,000 -	1,4 b
9 Ranman Top 0,25 L/ha ACEGIKMOQS UW Resistim 1,5 L/ha BDFHJLNPR TVX	0,0 -	0,000 -	0,000 -	0,000 -	0,000 -	0,0 b
10 AgriCHOS 2,0 L/ha ACEGIK Ranman Top 0,5 L/ha MOQS UW	0,0 -	0,004 -	0,008 -	0,008 -	0,015 -	0,2 b
11 Resistim 3,0 L/ha ACEGIK Ranman Top 0,5 L/ha MOQS UW	0,0 -	0,000 -	0,000 -	0,000 -	0,000 -	0,1 b

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
 Missing data estimates are included in columns: Average=10,11,12,13,14,15

Could not calculate LSD (% mean diff) for columns 1 because error mean square = 0.



Bekæmpelse af kartoffelskimmel med alternative strategier		
Trial ID: 20526	Location: Flakkebjerg	Trial Year: 2020
Protocol ID: 20526	Investigator (Creator): Hans Hansen	
Project ID:	Study Director: Peter Hartvig	
Official Trial ID: 20526	Sponsor Contact: KAF	

	D Disease PHYTIN Phytophthora infestans Late blight of potato C SOLTU B POT Solanum tuberosum	D Disease PHYTIN Phytophthora infestans Late blight of potato C SOLTU B POT Solanum tuberosum	D Disease PHYTIN Phytophthora infestans Late blight of potato C SOLTU B POT Solanum tuberosum	D Disease PHYTIN Phytophthora infestans Late blight of potato C SOLTU B POT Solanum tuberosum	D Disease PHYTIN Phytophthora infestans Late blight of potato C SOLTU B POT Solanum tuberosum	D Disease PHYTIN Phytophthora infestans Late blight of potato C SOLTU B POT Solanum tuberosum
Pest Type						
Pest Code						
Pest Scientific Name						
Pest Name						
Crop Type, Code						
BBCH Scale						
Crop Scientific Name						
Crop Name	Potato	Potato	Potato	Potato	Potato	Potato
Crop Variety	Kuras	Kuras	Kuras	Kuras	Kuras	Kuras
Description	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato
Rating Date	29-7-20	5-8-20	12-8-20	19-8-20	26-8-20	3-9-20
Part Rated	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -
Rating Type	PESSEV	PESSEV	PESSEV	PESSEV	PESSEV	PESSEV
Rating Unit	%	%	%	%	%	%
Sample Size	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Collection Basis						
Number of Subsamples	1	1	1	1	1	1
Crop Stage Scale	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH
Crop Stage Majority/Min/Max	68 - -	69 - -	69 - -	69 - -	91 - -	91 - -
Assessed By	IKA	IKA	HHH	HHH	HHH	HHH
Days After First/Last Applic.	37 1	44 1	51 1	58 2	65 2	73 3
Trt-Eval Interval	37 DA-A	44 DA-A	51 DA-A	58 DA-A	65 DA-A	73 DA-A
Plant-Eval Interval	97 DP-1	104 DP-1	111 DP-1	118 DP-1	125 DP-1	133 DP-1
Days After Emergence	58 DE-1	65 DE-1	72 DE-1	79 DE-1	86 DE-1	94 DE-1
ARM Action Codes						
Number of Decimals		3	3	3	3	1
Trt Treatment						
No. Name	1	2	3	4	5	6
Rate Appl						
Unit Code						
12 Resistim	3,0 L/ha ACEGIK	0,0 -	0,000 -	0,001 -	0,001 -	0,000 -
Proxanil	2,5 L/ha MO					
Ranman Top	0,5 L/ha OQSUW					0,1 b
LSD P=.05		0,0023	0,0050	0,0050	0,1610	11,79
Standard Deviation	0,00	0,0016	0,0035	0,0035	0,1119	8,19
CV	0,0	349,3	315,91	315,91	526,59	153,86
Grand Mean	0,00	0,0005	0,0011	0,0011	0,0213	5,33
Levene's F	0,00	4,441	3,156	3,156	1,616	15,14
Levene's Prob(F)	0,00*	0,001*	0,004*	0,004*	0,136	0,001*
Rank X2	.	.	.	.	.	.
P(Rank X2)	.	.	.	.	.	.
Skewness	.	4,4524*	3,8493*	3,8493*	6,7019*	3,1739*
Kurtosis	.	21,0386*	15,6131*	15,6131*	45,7411*	10,1844*
Replicate F	0,000	0,574	0,691	0,691	1,003	1,615
Replicate Prob(F)	1,0000	0,6359	0,5640	0,5640	0,4036	0,2047
Treatment F	0,000	1,877	1,627	1,627	1,326	5,501
Treatment Prob(F)	1,0000	0,0800	0,1367	0,1367	0,2543	0,0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).  
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 Missing data estimates are included in columns: Average=10,11,12,13,14,15

Could not calculate LSD (% mean diff) for columns 1 because error mean square = 0.

Bekæmpelse af kartoffelskimmel med alternative strategier  
 Trial ID: 20526 Location: Flakkebjerg Trial Year: 2020  
 Protocol ID: 20526 Investigator (Creator): Hans Hansen  
 Project ID: Study Director: Peter Hartvig  
 Official Trial ID: 20526 Sponsor Contact: KAF

Pest Type	D Disease	D Disease	D Disease	D Disease	C SOLTU	C SOLTU
Pest Code	PHYTIN	PHYTIN	PHYTIN	PHYTIN	BPOT	BPOT
Pest Scientific Name	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Solanum tuberosum	Solanum tuberosum
Pest Name	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato		
Crop Type, Code	C SOLTU	C SOLTU	C SOLTU	C SOLTU		
BBCH Scale	BPOT	BPOT	BPOT	BPOT		
Crop Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum
Crop Name	Potato	Potato	Potato	Potato	Potato	Potato
Crop Variety	Kuras	Kuras	Kuras	Kuras	Signum	Signum
Description	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	YIELD, kg/plot	YIELD HKG/HA
Rating Date	9-9-20	17-9-20	18-11-20	18-11-20	16-10-18	16-10-18
Part Rated	PLANT -	PLANT -	PLANT -	TUBER C	TUBER C	TUBER C
Rating Type	PESSEV	PESSEV	AUDPC	PESINC	YIELD	YIELD
Rating Unit	%	%	PERCENT	KG/PLOT	HKG/HA	HKG/HA
Sample Size	1 PLOT	1 PLOT	1 PLOT	100 TUBER	15,75 m2	1 ha
Collection Basis				1 PLOT	1 PLOT	1 PLOT
Number of Subsamples	1	1	1	1	1	1
Crop Stage Scale	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH
Crop Stage Majority/Min/Max	92 - -	93 - -	68 - -	99 - -	PEA	PEA
Assessed By	HHH	HHH	IKA	MIe	PEA	PEA
Days After First/Last Applic.	79 2	87 7		149 69	-615 -615	-615 -615
Trt-Eval Interval	79 DA-A	87 DA-A		149 DA-A	-615 DA-A	-615 DA-A
Plant-Eval Interval	139 DP-1	147 DP-1		209 DP-1	-555 DP-1	-555 DP-1
Days After Emergence	100 DE-1	108 DE-1		170 DE-1	-594 DE-1	-594 DE-1
ARM Action Codes			T1 AUDPC APC			TY2 APOC
Number of Decimals	1	1	1	1		1
Trt Treatment No. Name	7	8	9	10	11	12
Rate Appl Rate Unit Code						
1 Untreated	95,0 a	98,5 a	1274,2 a (0,0%)	1,0 -	77,37 b	491,2 b (100,0%)
2 Ranman Top 0,25 L/ha ACEGIKMOQS UW	6,6 c	7,3 d	77,1 c (94,0%)	0,3 -	94,48 a	599,8 a (122,1%)
3 Ranman Top 0,5 L/ha ACEGIKMOQS UW	2,7 c	2,9 d	31,2 c (97,6%)	0,7 -	91,93 ab	583,7 ab (118,8%)
4 AgriCHOS 2,0 L/ha ACEGIKMOQS UW	95,0 a	99,8 a	1186,6 a (6,9%)	0,8 -	88,50 ab	561,9 ab (114,4%)
5 Resistim 3,0 L/ha ACEGIKMOQS UW	63,3 b	84,0 b	850,5 b (33,3%)	0,5 -	83,23 ab	528,4 ab (107,6%)
6 Ranman Top 0,5 L/ha ACEGIK AgriCHOS 2,0 L/ha MOQS UW	17,5 c	22,8 c	238,0 c (81,3%)	1,0 -	87,33 ab	554,5 ab (112,9%)
7 Ranman Top 0,25 L/ha ACEGIKMOQS UW AgriCHOS 1,0 L/ha BDFHJLNPR TVX	6,0 c	6,5 d	68,2 c (94,6%)	1,3 -	95,58 a	606,8 a (123,5%)
8 Ranman Top 0,5 L/ha ACEGIK Resistim 3,0 L/ha MOQS UW	15,0 c	19,3 c	191,6 c (85,0%)	0,7 -	88,45 ab	561,6 ab (114,3%)
9 Ranman Top 0,25 L/ha ACEGIKMOQS UW Resistim 1,5 L/ha BDFHJLNPR TVX	4,3 c	4,4 d	47,3 c (96,3%)	0,8 -	94,43 a	599,5 a (122,0%)
10 AgriCHOS 2,0 L/ha ACEGIK Ranman Top 0,5 L/ha MOQS UW	4,5 c	4,8 d	51,8 c (95,9%)	0,0 -	95,38 a	605,6 a (123,3%)
11 Resistim 3,0 L/ha ACEGIK Ranman Top 0,5 L/ha MOQS UW	5,8 c	6,8 d	68,2 c (94,6%)	0,0 -	96,23 a	611,0 a (124,4%)

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls). Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL. Missing data estimates are included in columns: Average=10,11,12,13,14,15

Could not calculate LSD (% mean diff) for columns 1 because error mean square = 0.

Bekæmpelse af kartoffelskimmel med alternative strategier						
Trial ID: 20526		Location: Flakkebjerg		Trial Year: 2020		
Protocol ID: 20526		Investigator (Creator): Hans Hansen				
Project ID:		Study Director: Peter Hartvig				
Official Trial ID: 20526		Sponsor Contact: KAF				

Pest Type	D Disease	D Disease	D Disease	D Disease		
Pest Code	PHYTIN	PHYTIN	PHYTIN	PHYTIN		
Pest Scientific Name	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans		
Pest Name	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato		
Crop Type, Code	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU
BBCH Scale	BPOT	BPOT	BPOT	BPOT	BPOT	BPOT
Crop Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum
Crop Name	Potato	Potato	Potato	Potato	Potato	Potato
Crop Variety	Kuras	Kuras	Kuras	Kuras	Signum	Signum
Description	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	YIELD, kg/plot	YIELD HKG/HA
Rating Date	9-9-20	17-9-20	18-11-20	16-10-18	15,75 m2	16-10-18
Part Rated	PLANT -	PLANT -	PLANT -	TUBER C	TUBER C	TUBER C
Rating Type	PESSEV	PESSEV	AUDPC	PESINC	YIELD	YIELD
Rating Unit	%	%	PERCENT	KG/PLOT	HKG/HA	HKG/HA
Sample Size	1 PLOT	1 PLOT	1 PLOT	100 TUBER	15,75 m2	1 ha
Collection Basis				1 PLOT	1 PLOT	1 PLOT
Number of Subsamples	1	1	1	1	1	1
Crop Stage Scale	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH
Crop Stage Majority/Min/Max	92 - -	93 - -	68 - -	99 - -	PEA	PEA
Assessed By	HHH	HHH	IKA	MIe	PEA	PEA
Days After First/Last Applic.	79 2	87 7		149 69	-615 -615	-615 -615
Trt-Eval Interval	79 DA-A	87 DA-A		149 DA-A	-615 DA-A	-615 DA-A
Plant-Eval Interval	139 DP-1	147 DP-1		209 DP-1	-555 DP-1	-555 DP-1
Days After Emergence	100 DE-1	108 DE-1		170 DE-1	-594 DE-1	-594 DE-1
ARM Action Codes			T1 AUDPC APC			TY2 APOC
Number of Decimals	1	1	1	1	1	1
Trt Treatment						
No. Name	7	8	9	10	11	12
Rate Appl						
Unit Code						
12 Resistim	3,0 L/ha ACEGIK		52,3 c	0,0 -	97,75 a	620,6 a
Proxanil	2,5 L/ha MO		(95,9%)			(126,3%)
Ranman Top	0,5 L/ha OQSUW	4,4 c	5,3 d			
LSD P=.05	9,51	9,50	143,74	1,46	10,351	65,72
Standard Deviation	6,61	6,61	99,92	1,00	7,168	45,51
CV	24,79	21,9	28,98	173,77	7,89	7,89
Grand Mean	26,66	30,17	344,75	0,58	90,885	577,05
Levene's F	2,411	0,934	3,205	0,377	0,986	0,986
Levene's Prob(F)	0,023*	0,52	0,004*	0,954	0,478	0,478
Rank X2	.	.	.	.	.	.
P(Rank X2)	.	.	.	.	.	.
Skewness	1,3022*	1,1828*	1,3481*	1,4253*	-0,0499	-0,0499
Kurtosis	-0,0926	-0,4558	0,1599	0,8871	-0,1823	-0,1823
Replicate F	2,661	2,392	3,132	1,719	2,098	2,098
Replicate Prob(F)	0,0642	0,0862	0,0386	0,1898	0,1214	0,1214
Treatment F	118,450	140,743	89,097	0,707	2,902	2,902
Treatment Prob(F)	0,0001	0,0001	0,0001	0,7202	0,0101	0,0101

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls). Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL. Missing data estimates are included in columns: Average=10,11,12,13,14,15

Could not calculate LSD (% mean diff) for columns 1 because error mean square = 0.

Bekæmpelse af kartoffelskimmel med alternative strategier  
 Trial ID: 20526 Location: Flakkebjerg Trial Year: 2020  
 Protocol ID: 20526 Investigator (Creator): Hans Hansen  
 Project ID: Study Director: Peter Hartvig  
 Official Trial ID: 20526 Sponsor Contact: KAF

Pest Type	C SOLTU	C SOLTU	C SOLTU				
Pest Code	BPOT	BPOT	BPOT				
Pest Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum				
Pest Name	Potato	Potato	Potato				
Crop Type, Code	STARCH	STARCH	STARCH INCREASE				
BBCH Scale	19-11-18	TUBER C	TUBER C				
Crop Scientific Name	STACON	STARCH	STARCH				
Crop Name	Signum	HKG/HA	HKG/HA				
Crop Variety	5	1	1				
Description	KG	ha	ha				
Rating Date	1	PLOT	1				
Part Rated	1	1	1				
Rating Type	BBCH	BBCH	BBCH				
Rating Unit	Mie						
Sample Size	-581	-581					
Collection Basis	-581	DA-A					
Number of Subsamples	-521	DP-1					
Crop Stage Scale	-560	DE-1					
Crop Stage Majority/Min/Max		T4 APOC	T3 APC				
Assessed By		1	1				
Days After First/Last Applic.							
Trt-Eval Interval							
Plant-Eval Interval							
Days After Emergence							
ARM Action Codes							
Number of Decimals							
Trt No.	Treatment Name	Rate	Unit	Code	13	14	15
1	Untreated				18,455 ab	86,3 c (100,0%)	0,0 -
2	Ranman Top	0,25	L/ha	ACEGIKMOQS UW	19,678 a	118,0 ab (136,7%)	27,7 -
3	Ranman Top	0,5	L/ha	ACEGIKMOQS UW	19,630 a	114,4 ab (132,6%)	31,3 -
4	AgriCHOS	2,0	L/ha	ACEGIKMOQS UW	17,817 b	100,1 abc (116,0%)	19,0 -
5	Resistim	3,0	L/ha	ACEGIKMOQS UW	18,290 ab	96,7 bc (112,0%)	13,9 -
6	Ranman Top AgriCHOS	0,5 2,0	L/ha L/ha	ACEGIK MOQS UW	18,480 ab	102,5 abc (118,8%)	21,0 -
7	Ranman Top AgriCHOS	0,25 1,0	L/ha L/ha	ACEGIKMOQS UW BDFHJLNPR TVX	19,228 ab	116,4 ab (134,9%)	29,7 -
8	Ranman Top Resistim	0,5 3,0	L/ha L/ha	ACEGIK MOQS UW	19,068 ab	107,0 ab (124,0%)	16,7 -
9	Ranman Top Resistim	0,25 1,5	L/ha L/ha	ACEGIKMOQS UW BDFHJLNPR TVX	18,635 ab	111,9 ab (129,7%)	24,0 -
10	AgriCHOS Ranman Top	2,0 0,5	L/ha L/ha	ACEGIK MOQS UW	19,933 a	121,1 a (140,3%)	31,9 -
11	Resistim Ranman Top	3,0 0,5	L/ha L/ha	ACEGIK MOQS UW	19,200 ab	117,4 ab (136,0%)	38,6 -

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).  
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
 Missing data estimates are included in columns: Average=10,11,12,13,14,15

Could not calculate LSD (% mean diff) for columns 1 because error mean square = 0.

Bekæmpelse af kartoffelskimmel med alternative strategier			
Trial ID: 20526	Location: Flakkebjerg	Trial Year: 2020	
Protocol ID: 20526	Investigator (Creator): Hans Hansen		
Project ID:	Study Director: Peter Hartvig		
Official Trial ID: 20526	Sponsor Contact: KAF		

Pest Type			
Pest Code			
Pest Scientific Name			
Pest Name			
Crop Type, Code	C SOLTU	C SOLTU	C SOLTU
BBCH Scale	BPOT	BPOT	BPOT
Crop Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum
Crop Name	Potato	Potato	Potato
Crop Variety	Signum	Signum	Signum
Description			STARCH INCREASE
Rating Date	19-11-18		
Part Rated	TUBER C	TUBER C	TUBER C
Rating Type	STACON	STARCH	STARCH
Rating Unit	%	HKG/HA	HKG/HA
Sample Size	5 KG	1 ha	1 ha
Collection Basis	1 PLOT	1 PLOT	1 PLOT
Number of Subsamples	1	1	1
Crop Stage Scale	BBCH	BBCH	BBCH
Crop Stage Majority/Min/Max			
Assessed By	Mie		
Days After First/Last Applic.	-581 -581		
Trt-Eval Interval	-581 DA-A		
Plant-Eval Interval	-521 DP-1		
Days After Emergence	-560 DE-1		
ARM Action Codes		T4 APOC	T3 APC
Number of Decimals		1	1
Trt Treatment			
No. Name	Rate Unit Code		
	13	14	15
12 Resistim	3,0 L/ha ACEGIK		
Proxanil	2,5 L/ha MO	121,1 a	38,2 -
Ranman Top	0,5 L/ha OQSUW	(140,4%)	
LSD P=.05	1,0388	13,05	23,06
Standard Deviation	0,7172	9,01	10,19
CV	3,77	8,23	41,86
Grand Mean	18,9979	109,40	24,35
Levene's F	1,147	1,58	
Levene's Prob(F)	0,361	0,154	
Rank X2	.	.	.
P(Rank X2)	.	.	.
Skewness	-0,0065	-0,1628	-0,1405
Kurtosis	-0,5449	-0,8886	-0,5692
Replicate F	4,925	2,347	6,087
Replicate Prob(F)	0,0072	0,0941	0,0357
Treatment F	3,355	5,947	2,348
Treatment Prob(F)	0,0047	0,0001	0,1052

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).  
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.  
Missing data estimates are included in columns: Average=10,11,12,13,14,15

Could not calculate LSD (% mean diff) for columns 1 because error mean square = 0.

Bekæmpelse af kartoffelskimmel med alternative strategier  
 Trial ID: 20526 Location: Flakkebjerg Trial Year: 2020  
 Protocol ID: 20526 Investigator (Creator): Hans Hansen  
 Project ID: Study Director: Peter Hartvig  
 Official Trial ID: 20526 Sponsor Contact: KAF

Pest Type	D Disease	D Disease	D Disease	D Disease	D Disease	D Disease
Pest Code	PHYTIN	PHYTIN	PHYTIN	PHYTIN	PHYTIN	PHYTIN
Pest Scientific Name	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans
Pest Name	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato
Crop Type, Code	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU
BBCH Scale	BPOT	BPOT	BPOT	BPOT	BPOT	BPOT
Crop Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum
Crop Name	Potato	Potato	Potato	Potato	Potato	Potato
Crop Variety	Kuras	Kuras	Kuras	Kuras	Kuras	Kuras
Description	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato
Rating Date	29-7-20	5-8-20	12-8-20	19-8-20	26-8-20	3-9-20
Part Rated	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -
Rating Type	PESSEV	PESSEV	PESSEV	PESSEV	PESSEV	PESSEV
Rating Unit	%	%	%	%	%	%
Sample Size	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Collection Basis						
Number of Subsamples	1	1	1	1	1	1
Crop Stage Scale	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH
Crop Stage Majority/Min/Max	68 - -	69 - -	69 - -	69 - -	91 - -	91 - -
Assessed By	IKA	IKA	HHH	HHH	HHH	HHH
Days After First/Last Applic.	37 1	44 1	51 1	58 2	65 2	73 3
Trt-Eval Interval	37 DA-A	44 DA-A	51 DA-A	58 DA-A	65 DA-A	73 DA-A
Plant-Eval Interval	97 DP-1	104 DP-1	111 DP-1	118 DP-1	125 DP-1	133 DP-1
Days After Emergence	58 DE-1	65 DE-1	72 DE-1	79 DE-1	86 DE-1	94 DE-1
ARM Action Codes						
Number of Decimals		3	3	3	3	1
Trt Treatment						
Rate Appl						
No. Name						
Rate Unit						
Code						
Plot	1	2	3	4	5	6
1 Untreated	102					
		0,0	0,000	0,000	0,000	0,100
	212	0,0	0,000	0,000	0,000	0,800
	306	0,0	0,000	0,000	0,000	0,000
	407	0,0	0,000	0,000	0,000	0,000
	Mean =	0,0	0,000	0,000	0,000	0,225
2 Ranman Top 0,25 L/ha ACEGIKMOQS UW	111	0,0	0,000	0,000	0,000	0,000
	205	0,0	0,000	0,000	0,000	0,000
	310	0,0	0,005	0,010	0,010	0,000
	408	0,0	0,000	0,000	0,000	0,000
	Mean =	0,0	0,001	0,003	0,003	0,000
3 Ranman Top 0,5 L/ha ACEGIKMOQS UW	107	0,0	0,000	0,000	0,000	0,000
	208	0,0	0,000	0,000	0,000	0,000
	309	0,0	0,000	0,000	0,000	0,000
	401	0,0	0,000	0,000	0,000	0,000
	Mean =	0,0	0,000	0,000	0,000	0,000
4 AgriCHOS 2,0 L/ha ACEGIKMOQS UW	109	0,0	0,000	0,000	0,000	0,050
	201	0,0	0,001	0,010	0,010	0,010
	308	0,0	0,000	0,000	0,000	0,000
	410	0,0	0,000	0,000	0,000	0,000
	Mean =	0,0	0,000	0,003	0,003	0,015
5 Resistim 3,0 L/ha ACEGIKMOQS UW	103	0,0	0,000	0,000	0,000	0,000
	209	0,0	0,000	0,000	0,000	0,000
	311	0,0	0,000	0,000	0,000	0,000
	405	0,0	0,000	0,000	0,000	0,000
	Mean =	0,0	0,000	0,000	0,000	0,000
6 Ranman Top 0,5 L/ha ACEGIK	101	0,0	0,000	0,000	0,000	0,000
AgriCHOS 2,0 L/ha MOQS UW	206	0,0	0,000	0,000	0,000	0,000
	303	0,0	0,000	0,000	0,000	0,000
	411	0,0	0,000	0,000	0,000	0,000
	Mean =	0,0	0,000	0,000	0,000	0,000
7 Ranman Top 0,25 L/ha ACEGIKMOQS UW	108	0,0	0,000	0,000	0,000	0,000
AgriCHOS 1,0 L/ha BDFHJLNPR TVX	211	0,0	0,000	0,000	0,000	0,000
	301	0,0	0,000	0,000	0,000	0,000
	412	0,0	0,000	0,000	0,000	0,000
	Mean =	0,0	0,000	0,000	0,000	0,000
8 Ranman Top 0,5 L/ha ACEGIK	110	0,0	0,000	0,000	0,000	0,000
Resistim 3,0 L/ha MOQS UW	207	0,0	0,000	0,000	0,000	0,000
	312	0,0	0,000	0,000	0,000	0,000
	406	0,0	0,000	0,000	0,000	0,000
	Mean =	0,0	0,000	0,000	0,000	0,000
9 Ranman Top 0,25 L/ha ACEGIKMOQS UW	104	0,0	0,000	0,000	0,000	0,000
Resistim 1,5 L/ha BDFHJLNPR TVX	210	0,0	0,000	0,000	0,000	0,000
	304	0,0	0,000	0,000	0,000	0,000
	409	0,0	0,000	0,000	0,000	0,000
	Mean =	0,0	0,000	0,000	0,000	0,000
10 AgriCHOS 2,0 L/ha ACEGIK	112	0,0	0,010	0,020	0,020	0,050
Ranman Top 0,5 L/ha MOQS UW	204	0,0	0,005	0,010	0,010	0,010
	305	0,0	0,000	0,000	0,000	0,000
	404	0,0	0,000	0,000	0,000	0,000
	Mean =	0,0	0,004	0,008	0,008	0,015

Bekæmpelse af kartoffelskimmel med alternative strategier		
Trial ID: 20526	Location: Flakkebjerg	Trial Year: 2020
Protocol ID: 20526	Investigator (Creator): Hans Hansen	
Project ID:	Study Director: Peter Hartvig	
Official Trial ID: 20526	Sponsor Contact: KAF	

Pest Type	D Disease	D Disease	D Disease	D Disease	D Disease	D Disease			
Pest Code	PHYTIN	PHYTIN	PHYTIN	PHYTIN	PHYTIN	PHYTIN			
Pest Scientific Name	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans			
Pest Name	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato			
Crop Type, Code	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU			
BBCH Scale	BPOT	BPOT	BPOT	BPOT	BPOT	BPOT			
Crop Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum			
Crop Name	Potato	Potato	Potato	Potato	Potato	Potato			
Crop Variety	Kuras	Kuras	Kuras	Kuras	Kuras	Kuras			
Description	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato			
Rating Date	29-7-20	5-8-20	12-8-20	19-8-20	26-8-20	3-9-20			
Part Rated	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -	PLANT -			
Rating Type	PESSEV	PESSEV	PESSEV	PESSEV	PESSEV	PESSEV			
Rating Unit	%	%	%	%	%	%			
Sample Size	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT			
Collection Basis									
Number of Subsamples	1	1	1	1	1	1			
Crop Stage Scale	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH			
Crop Stage Majority/Min/Max	68 - -	69 - -	69 - -	69 - -	91 - -	91 - -			
Assessed By	IKA	IKA	HHH	HHH	HHH	HHH			
Days After First/Last Applic.	37 1	44 1	51 1	58 2	65 2	73 3			
Trt-Eval Interval	37 DA-A	44 DA-A	51 DA-A	58 DA-A	65 DA-A	73 DA-A			
Plant-Eval Interval	97 DP-1	104 DP-1	111 DP-1	118 DP-1	125 DP-1	133 DP-1			
Days After Emergence	58 DE-1	65 DE-1	72 DE-1	79 DE-1	86 DE-1	94 DE-1			
ARM Action Codes									
Number of Decimals		3	3	3	3	1			
Trt Treatment	Rate Appl								
No. Name	Rate Unit Code	Plot	1	2	3	4	5	6	
11 Resistim	3,0 L/ha ACEGIK	105	0,0	0,000	0,000	0,000	0,000	0,000	0,0
Ranman Top	0,5 L/ha MOQSUW	203	0,0	0,000	0,001	0,001	0,000	0,000	0,0
		302	0,0	0,000	0,000	0,000	0,000	0,000	0,1
		403	0,0	0,000	0,000	0,000	0,000	0,000	0,5
		Mean =	0,0	0,000	0,000	0,000	0,000	0,000	0,1
12 Resistim	3,0 L/ha ACEGIK	106	0,0	0,000	0,000	0,000	0,000	0,000	0,0
Proxanil	2,5 L/ha MO	202	0,0	0,001	0,001	0,001	0,001	0,000	0,0
Ranman Top	0,5 L/ha OQSUW	307	0,0	0,000	0,001	0,001	0,001	0,000	0,1
		402	0,0	0,000	0,000	0,000	0,000	0,000	0,3
		Mean =	0,0	0,000	0,001	0,001	0,001	0,000	0,1

Bekæmpelse af kartoffelskimmel med alternative strategier  
 Trial ID: 20526 Location: Flakkebjerg Trial Year: 2020  
 Protocol ID: 20526 Investigator (Creator): Hans Hansen  
 Project ID: Study Director: Peter Hartvig  
 Official Trial ID: 20526 Sponsor Contact: KAF

Pest Type	D Disease	D Disease	D Disease	D Disease			
Pest Code	PHYTIN	PHYTIN	PHYTIN	PHYTIN			
Pest Scientific Name	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans			
Pest Name	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato			
Crop Type, Code	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU	
BBCH Scale	BPOT	BPOT	BPOT	BPOT	BPOT	BPOT	
Crop Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	
Crop Name	Potato	Potato	Potato	Potato	Potato	Potato	
Crop Variety	Kuras	Kuras	Kuras	Kuras	Signum	Signum	
Description	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	YIELD, kg/plot	YIELD HKG/HA	
Rating Date	9-9-20	17-9-20	18-11-20	16-10-18	16-10-18	16-10-18	
Part Rated	PLANT -	PLANT -	PLANT -	TUBER C	TUBER C	TUBER C	
Rating Type	PESSEV	PESSEV	PESINC	PERCENT	YIELD	YIELD	
Rating Unit	%	%	%	KG/PLOT	HKG/HA	HKG/HA	
Sample Size	1 PLOT	1 PLOT	1 PLOT	100 TUBER	15,75 m2	1 ha	
Collection Basis				1 PLOT	1 PLOT	1 PLOT	
Number of Subsamples	1	1	1	1	1	1	
Crop Stage Scale	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH	
Crop Stage Majority/Min/Max	92 - -	93 - -	68 - -	99 - -			
Assessed By	HHH	HHH	IKA	MIe	PEA	PEA	
Days After First/Last Applic.	79 2	87 7		149 69	-615 -615	-615 -615	
Trt-Eval Interval	79 DA-A	87 DA-A		149 DA-A	-615 DA-A	-615 DA-A	
Plant-Eval Interval	139 DP-1	147 DP-1		209 DP-1	-555 DP-1	-555 DP-1	
Days After Emergence	100 DE-1	108 DE-1		170 DE-1	-594 DE-1	-594 DE-1	
ARM Action Codes			T1 AUDPC APC			TY2 APOC	
Number of Decimals	1	1	1	1	1	1	
Trt Treatment	Rate Appl						
No. Name	Rate Unit Code	Plot	7	8	9	10	
1 Untreated		102	90,0	95,0	1059,8	1,0	
		212	100,0	100,0	1491,0	2,0	Exclude because of flooding
		306	95,0	99,0	1411,0		
		407	95,0	100,0	1135,0	0,0	Uncertain assesment
		Mean =	95,0	98,5	1274,2	1,0	
2 Ranman Top 0,25 L/ha ACEGIKMOQS UW		111	7,0	8,0	86,6	0,0	
		205	3,5	4,0	41,2		Exclude because of flooding
		310	8,0	9,0	92,5	1,0	
		408	8,0	8,0	88,0	0,0	Uncertain assesment
		Mean =	6,6	7,3	77,1	0,3	
3 Ranman Top 0,5 L/ha ACEGIKMOQS UW		107	0,8	1,0	9,3	0,0	
		208	3,0	3,0	33,0		Exclude because of flooding
		309	3,0	3,5	35,1	1,0	
		401	4,0	4,0	47,5	1,0	Uncertain assesment
		Mean =	2,7	2,9	31,2	0,7	
4 AgriCHOS 2,0 L/ha ACEGIKMOQS UW		109	95,0	99,0	1166,4	3,0	
		201	98,0	100,0	1156,2	0,0	Exclude because of flooding
		308	95,0	100,0	1310,0	0,0	
		410	92,0	100,0	1114,0	0,0	Exclude because of flooding
		Mean =	95,0	99,8	1186,6	0,8	
5 Resistim 3,0 L/ha ACEGIKMOQS UW		103	33,0	50,0	452,0	0,0	
		209	85,0	96,0	1119,0	1,0	Exclude because of flooding
		311	65,0	94,0	901,0	0,0	
		405	70,0	96,0	930,0	1,0	Uncertain assesment
		Mean =	63,3	84,0	850,5	0,5	
6 Ranman Top 0,5 L/ha ACEGIK AgriCHOS 2,0 L/ha MOQS UW		101	10,0	20,0	164,0	0,0	
		206	20,0	23,0	253,0		Exclude because of flooding
		303	25,0	28,0	315,0	3,0	
		411	15,0	20,0	220,0	0,0	Uncertain assesment
		Mean =	17,5	22,8	238,0	1,0	
7 Ranman Top 0,25 L/ha ACEGIKMOQS UW AgriCHOS 1,0 L/ha BDFHJLNPR TVX		108	4,0	5,0	48,0	2,0	
		211	5,0	5,0	55,0	1,0	Exclude because of flooding
		301	10,0	10,0	110,7	2,0	
		412	5,0	6,0	59,0	0,0	Uncertain assesment
		Mean =	6,0	6,5	68,2	1,3	
8 Ranman Top 0,5 L/ha ACEGIK Resistim 3,0 L/ha MOQS UW		110	18,0	20,0	209,5	0,0	
		207	12,0	18,0	163,0		Exclude because of flooding
		312	15,0	17,0	180,0	2,0	
		406	15,0	22,0	214,0	0,0	Uncertain assesment
		Mean =	15,0	19,3	191,6	0,7	
9 Ranman Top 0,25 L/ha ACEGIKMOQS UW Resistim 1,5 L/ha BDFHJLNPR TVX		104	2,0	2,5	24,0	0,0	
		210	5,0	5,0	55,0	0,0	Exclude because of flooding
		304	5,0	5,0	55,0	3,0	
		409	5,0	5,0	55,0	0,0	Uncertain assesment
		Mean =	4,3	4,4	47,3	0,8	
10 AgriCHOS 2,0 L/ha ACEGIK Ranman Top 0,5 L/ha MOQS UW		112	4,0	5,0	49,4	0,0	
		204	5,0	5,0	55,3		Exclude because of flooding
		305	5,0	5,0	55,0	0,0	Uncertain assesment
		404	4,0	4,0	47,5	0,0	
		Mean =	4,5	4,8	51,8	0,0	



Bekæmpelse af kartoffelskimmel med alternative strategier		
Trial ID: 20526	Location: Flakkebjerg	Trial Year: 2020
Protocol ID: 20526	Investigator (Creator): Hans Hansen	
Project ID:	Study Director: Peter Hartvig	
Official Trial ID: 20526	Sponsor Contact: KAF	

Pest Type	D Disease	D Disease	D Disease	D Disease				
Pest Code	PHYTIN	PHYTIN	PHYTIN	PHYTIN				
Pest Scientific Name	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans	Phytophthora infestans				
Pest Name	Late blight of potato	Late blight of potato	Late blight of potato	Late blight of potato				
Crop Type, Code	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU	C SOLTU		
BBCH Scale	BPOT	BPOT	BPOT	BPOT	BPOT	BPOT		
Crop Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum		
Crop Name	Potato	Potato	Potato	Potato	Potato	Potato		
Crop Variety	Kuras	Kuras	Kuras	Kuras	Signum	Signum		
Description	Late Starch potato	Late Starch potato	Late Starch potato	Late Starch potato	YIELD, kg/plot	YIELD HKG/HA		
Rating Date	9-9-20	17-9-20		18-11-20	16-10-18	16-10-18		
Part Rated	PLANT -	PLANT -	PLANT -	TUBER C	TUBER C	TUBER C		
Rating Type	PESSEV	PESSEV		PESINC	YIELD	YIELD		
Rating Unit	%	%	AUDPC	PERCENT	KG/PLOT	HKG/HA		
Sample Size	1 PLOT	1 PLOT	1 PLOT	100 TUBER	15,75 m2	1 ha		
Collection Basis				1 PLOT	1 PLOT	1 PLOT		
Number of Subsamples	1	1	1	1	1	1		
Crop Stage Scale	BBCH	BBCH	BBCH	BBCH	BBCH	BBCH		
Crop Stage Majority/Min/Max	92 - -	93 - -	68 - -	99 - -				
Assessed By	HHH	HHH	IKA	MIe	PEA	PEA		
Days After First/Last Applic.	79 2	87 7		149 69	-615 -615	-615 -615		
Trt-Eval Interval	79 DA-A	87 DA-A		149 DA-A	-615 DA-A	-615 DA-A		
Plant-Eval Interval	139 DP-1	147 DP-1		209 DP-1	-555 DP-1	-555 DP-1		
Days After Emergence	100 DE-1	108 DE-1		170 DE-1	-594 DE-1	-594 DE-1		
ARM Action Codes			T1 AUDPC APC			TY2 APOC		
Number of Decimals	1	1	1	1		1		
Trt Treatment	Rate Appl							
No. Name	Rate Unit Code	Plot	7	8	9	10	11	12
11 Resistim	3,0 L/ha ACEGIK	105	3,0	3,0	33,0	0,0	94,20	598,1
Ranman Top	0,5 L/ha MOQSUW	203	6,0	8,0	74,0		107,90	685,1
		302	6,0	7,0	70,4	0,0	92,40	586,7
		403	8,0	9,0	95,5	0,0	90,40	574,0
		Mean =	5,8	6,8	68,2	0,0	96,23	611,0
12 Resistim	3,0 L/ha ACEGIK	106	0,5	0,5	5,5	0,0	91,50	581,0
Proxanil	2,5 L/ha MO	202	12,0	12,0	132,0		109,30	694,0
Ranman Top	0,5 L/ha OQSUW							
		307	2,0	5,0	34,7	0,0	98,10	622,9
		402	3,0	3,5	37,1	0,0	92,10	584,8
		Mean =	4,4	5,3	52,3	0,0	97,75	620,6

Bekæmpelse af kartoffelskimmel med alternative strategier  
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 Project ID: Study Director: Peter Hartvig  
 Official Trial ID: 20526 Sponsor Contact: KAF

Pest Type			
Pest Code			
Pest Scientific Name			
Pest Name			
Crop Type, Code	C SOLTU	C SOLTU	C SOLTU
BBCH Scale	BPOT	BPOT	BPOT
Crop Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum
Crop Name	Potato	Potato	Potato
Crop Variety	Signum	Signum	Signum
Description			STARCH INCREASE
Rating Date	19-11-18		
Part Rated	TUBER C	TUBER C	TUBER C
Rating Type	STACON	STARCH	STARCH
Rating Unit	%	HKG/HA	HKG/HA
Sample Size	5 KG	1 ha	1 ha
Collection Basis	1 PLOT	1 PLOT	1 PLOT
Number of Subsamples	1	1	1
Crop Stage Scale	BBCH	BBCH	BBCH
Crop Stage Majority/Min/Max			
Assessed By	Mie		
Days After First/Last Applic.	-581 -581		
Trt-Eval Interval	-581 DA-A		
Plant-Eval Interval	-521 DP-1		
Days After Emergence	-560 DE-1		
ARM Action Codes		T4 APOC	T3 APC
Number of Decimals		1	1
Trt Treatment	Rate Appl		
No. Name	Rate Unit Code	Plot	
		13	14
			15
1 Untreated		102	
		Exclude because of flooding	Exclude because of flooding
		212 17,830	83,8
		306 .	0,0
		407 19,080	88,8
		Mean = 18,455	86,3
2 Ranman Top 0,25 L/ha ACEGIKMOQSUW		111 19,440	128,2
		205 20,720	122,5
		310 18,900	115,6
		408 19,650	105,5
		Mean = 19,678	118,0
3 Ranman Top 0,5 L/ha ACEGIKMOQSUW		107 20,150	100,3
		208 19,670	117,8
		309 19,370	122,2
		401 19,330	117,3
		Mean = 19,630	114,4
4 AgriCHOS 2,0 L/ha ACEGIKMOQSUW		109 17,980	100,8
		201 17,790	102,8
		308 17,680	96,8
		410 .	.
		Exclude because of flooding	Exclude because of flooding
		Mean = 17,817	100,1
5 Resistim 3,0 L/ha ACEGIKMOQSUW		103 18,330	94,3
		209 18,350	106,1
		311 18,170	91,9
		405 18,310	94,3
		Mean = 18,290	96,7
6 Ranman Top 0,5 L/ha ACEGIK		101 19,330	108,2
AgriCHOS 2,0 L/ha MOQSUW		206 18,930	104,8
		303 17,180	94,5
		411 .	.
		Exclude because of flooding	Exclude because of flooding
		Mean = 18,480	102,5
7 Ranman Top 0,25 L/ha ACEGIKMOQSUW		108 19,610	123,3
AgriCHOS 1,0 L/ha BDFHJLNPRTVX		211 17,820	114,4
		301 18,380	110,2
		412 21,100	117,6
		Mean = 19,228	116,4
8 Ranman Top 0,5 L/ha ACEGIK		110 19,140	118,1
Resistim 3,0 L/ha MOQSUW		207 19,430	94,5
		312 17,920	103,8
		406 19,780	111,5
		Mean = 19,068	107,0
9 Ranman Top 0,25 L/ha ACEGIKMOQSUW		104 18,950	129,9
Resistim 1,5 L/ha BDFHJLNPRTVX		210 19,300	124,4
		304 17,290	97,2
		409 19,000	96,1
		Mean = 18,635	111,9
10 AgriCHOS 2,0 L/ha ACEGIK		112 20,640	126,9
Ranman Top 0,5 L/ha MOQSUW		204 19,800	123,8
		305 .	.
		Uncertain assesment	
		404 19,360	112,6
		Mean = 19,933	121,1
			23,8
			31,9

Bekæmpelse af kartoffelskimmel med alternative strategier			
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Pest Type	C SOLTU	C SOLTU	C SOLTU
Pest Code			
Pest Scientific Name			
Pest Name			
Crop Type, Code	C SOLTU	C SOLTU	C SOLTU
BCH Scale	BPOT	BPOT	BPOT
Crop Scientific Name	Solanum tuberosum	Solanum tuberosum	Solanum tuberosum
Crop Name	Potato	Potato	Potato
Crop Variety	Signum	Signum	Signum
Description			STARCH INCREASE
Rating Date	19-11-18		
Part Rated	TUBER C	TUBER C	TUBER C
Rating Type	STACON	STARCH	STARCH
Rating Unit	%	HKG/HA	HKG/HA
Sample Size	5 KG	1 ha	1 ha
Collection Basis	1 PLOT	1 PLOT	1 PLOT
Number of Subsamples	1	1	1
Crop Stage Scale	BBCH	BBCH	BBCH
Crop Stage Majority/Min/Max			
Assessed By	Mie		
Days After First/Last Applic.	-581 -581		
Trt-Eval Interval	-581 DA-A		
Plant-Eval Interval	-521 DP-1		
Days After Emergence	-560 DE-1		
ARM Action Codes		T4 APOC	T3 APC
Number of Decimals		1	1
Trt Treatment			
Rate Appl			
No. Name	Rate Unit Code	Plot	
		13	14
11 Resistim	3,0 L/ha ACEGIK	105	114,7
Ranman Top	0,5 L/ha MOQSUW	203	134,4
		302	105,0
		403	115,4
	Mean =	19,200	117,4
12 Resistim	3,0 L/ha ACEGIK	106	116,9
Proxanil	2,5 L/ha MO	202	129,8
Ranman Top	0,5 L/ha OQSUW	307	118,5
		402	119,3
	Mean =	19,563	121,1