

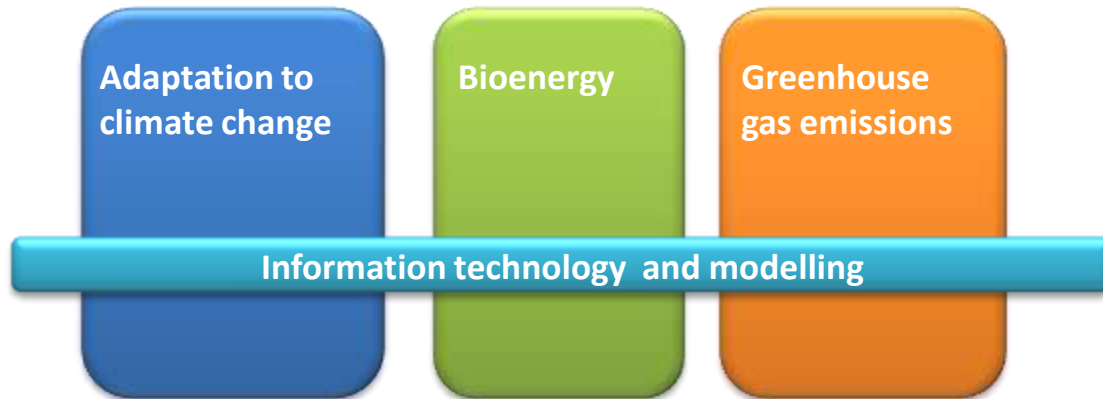
# Landmanden og beslutninger

Allan Leck Jensen

# Informatik og Beslutningsstøtte

- 1991: Statens Planteavlsvforsøg
- 1997: Danmarks JordbrugsForskning
- 2007: Aarhus Universitet,  
Det Jordbrugsvdenskabelige Fakultet
- 2011: Aarhus Universitet,  
Fakultet for Naturvidenskab og Teknologi

# Forskergruppe: Klima og bioenergi



# Web applikationer 1996-2010

2 days weather forecast	Field recordings in Google Maps	Prediction of firmness of pears
7 days weather forecast	Field recordings on mobile	Prediction of maize growth
AG2020	Forecast of grass growth and quality	Q_PorkChains
ALFAM	FruitQuality	Rain forecast animation
Amaranth	GroFrIT	Risk models for crop diseases and pests
Ammonia volatilization	Gysse/NJFjord	Roses online
BeelInfo	Harvest forecasts	SAFIR
Blight Management	HortInfo	Scandinavian Long Term Experiments
BurPlan	IAT	ScanTurf
CertCost	Irrigation Manager	Skimmel
Cost718	Karoline/NJFjord	Soil temperature
Critical harvest day of carrots	KlimaNet	SoilCompaction
Daisy - Need for additional fertilization	LBNordic	SortInfo
Danish Universities Frontier Program	LowP	SortsValg
Database for national variety testing	MoVeTracker	Tracing product history with mobile camera
eAdvice	NegFry DK	UgandaDairy
Endure	NegFry LT, LV, EE and PL	Vandregnskab
EucaBlight	Nmin	Water Balance
EuroBlight	NP-Risikokort	WaterWeb
EuroWheat	Optimal harvest time of apples	Weather forecast animation
eWarnings	OrganicHACCP	Weather observations
FarmN	PlantInfo	Weather radar animation
FASSET	PlantInfo Mobile	WebBlight
FertOrgaNic	Polish-Baltic web sites	WebComponents



Danish Institute of Plant and Soil Science Danish Agricultural Advisory Centre



# Pl@nteInfo

Information System for Crop Production

This is a demonstration of Pl@nteInfo with information from 26 May 1996.



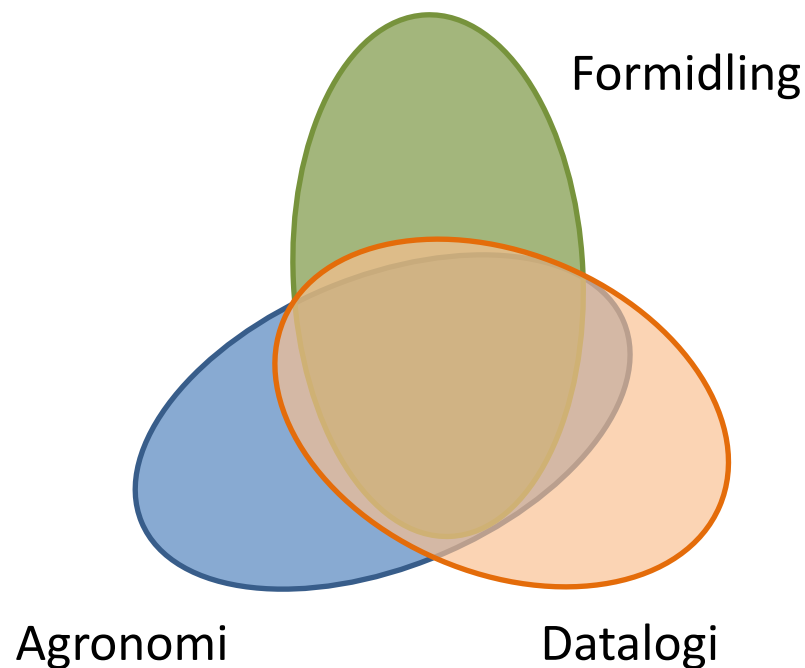
**Latest news:** (25 May) Risk calculations for [Potato late blight](#) has started



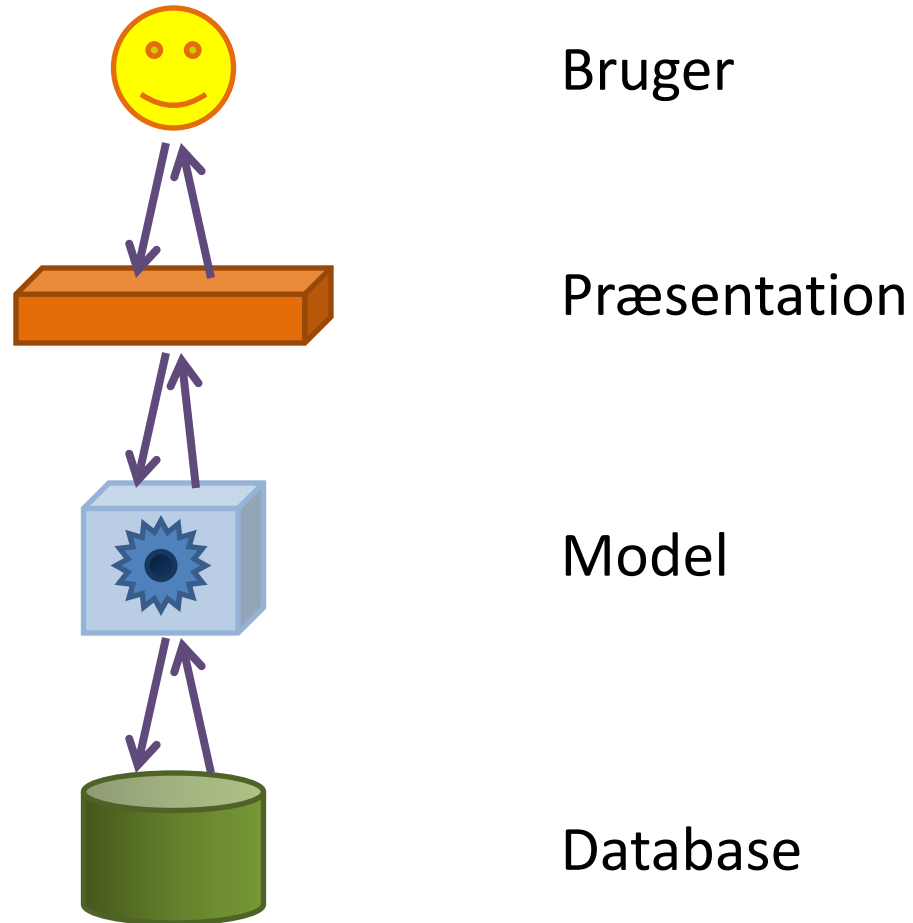
Overview	Contents
<a href="#">Risk calculations of diseases and pests</a>	The risk of several diseases and pests are calculated on a daily basis from weather data. At the moment Pl@nteInfo contains: <a href="#">Potato late blight</a> , <a href="#">Septoria</a> , <a href="#">Leaf blotch and Net blotch</a> , <a href="#">Frit fly</a> , <a href="#">Brassica pod midge</a> og <a href="#">Eyespot</a>
<a href="#">Field recordings of diseases and pests</a>	Data from field trials coordinated by the Danish Agricultural Advisory Centre and collected by regional crop advisors.
<a href="#">Biology and control of diseases, pests and weeds</a>	From the information database of the Danish decision support system PC-Plant Protection: <a href="#">Diseases</a> , <a href="#">Pests and beneficial animals</a> , <a href="#">Weeds</a>
<a href="#">The weather</a>	Daily updated agricultural weather information: <a href="#">Minimum temperature</a> , <a href="#">Soil temperature</a> , <a href="#">Water balance</a> , <a href="#">Potential evaporation</a> and <a href="#">Input data for the Danish irrigation decision support system MARKVAND</a> Weather forecasts from the Danish Meteorological Institute: <a href="#">Weather home page</a> , <a href="#">Denmark today</a> , <a href="#">7 day forecast</a> , <a href="#">Regional weather</a> , <a href="#">Precipitation</a>
<a href="#">Mailbox</a> <a href="#">Guest book</a>	The mailbox enables users to write and read comments and suggestions for Pl@nteInfo, and the Guest book gives us information about the users (occupation, equipment etc.)
<a href="#">Information</a>	<a href="#">Introduction to Pl@nteInfo</a> , <a href="#">Model documentation</a> , <a href="#">The Project</a> , <a href="#">Other relevant WWW servers</a> , <a href="#">Statistics of Pl@nteInfo access</a>

# Fælles træk

- Web-baseret
- Dynamisk
- Interaktiv
- Skræddersyet
- Added value



# Typisk struktur af applikationer



## Ammoniakfordampning ved udbringning af gylle

2 døgns prognose

7 døgns prognose

2010

Marts

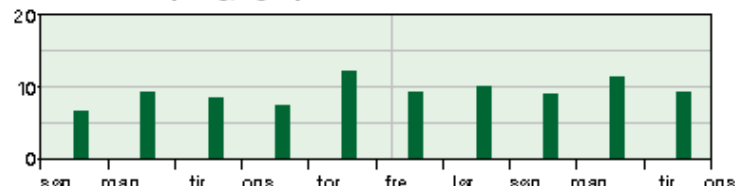
Valgt

## Foundsætninger

Gylletype Tørstofindhold (%) NH<sub>3</sub> indhold (g N/kg) Gylle pr. ha (tons/ha) Udbringningsmetode Nedpløjning,  
timer efter  
udbringning Gylle pr. time  
(tons/time) Ha i alt Start timer efter  
kl. 24 Tør / våd jord  Beregnes fra  
vejrdata.

Vis

## Ammoniakfordampning, kg N pr. ha



Søjlerne viser for hver dag hvor meget ammoniak der fordampes, hvis gødningen er udbragt netop den dag.

## Temperatur (°C)



## Vindhastighed (m/s)



Applikationen beregner den totale ammoniakfordampning i op til 3 døgn fra en udbringning af gylle til bar jord eller afgrøder mindre end 10 cm. Nedfældning er i 5 cm. Mængden af udbragt gylle er defineret ved gylle pr. time samt første og sidste time. Beregningen baseres på en model udarbejdet i EU-projektet [ALFAM](#).

## Litteratur:

Søgaard, H.T., Sommer, S.G., Hutchings, N.J., Huijsman, J., Bussink, W. & Niceklson, F. 2001. Ammonia volatilization from manure applied to fields - data collection for an EU database and its statistical analysis. DIAS report no. 21, Animal Husbandry, 174-187.

# PlantInfo - Vandregnskab

		31.07	01.08	02.08	03.08	04.08	05.08	State 31/07 kl. 08				
Field ↓	Name	Soil type	Crop ↓	V	10 20 30 40 50 60 70 80 90 100 mm						Balance mm ↓	Print
1	West Field	1	Potato, late								-22	Details
2	North Field	1	Potato, late								-21	Details
3	East Field	1	Potato, late								-22	Details
4	South Field	3	Maize								-21	Details
5	The meadow	1	Grass								-22	Details

# PlantInfo - Vandregnskab

				Prognosis 05/08 kl. 08														
31.07	01.08	02.08	03.08	04.08	05.08						Balance mm	Print						
Field ↓	Name	Soil type	Crop ↓	↓	↑	10	20	30	40	50	60	70	80	90	100 mm	mm	↓	
1	West Field	1	Potato, late			■	■	■	■	■	■	■	■	■	■	-2		Details
2	North Field	1	Potato, late			■	■	■	■	■	■	■	■	■	■	-2		Details
3	East Field	1	Potato, late			■	■	■	■	■	■	■	■	■	■	-2		Details
4	South Field	3	Maize			■	■	■	■	■	■	■	■	■	■	-2		Details
5	The meadow	1	Grass			■	■	■	■	■	■	■	■	■	■	-3		Details

# PlantInfo - Vandregnskab

## Field no. 2 North Field Potato, late

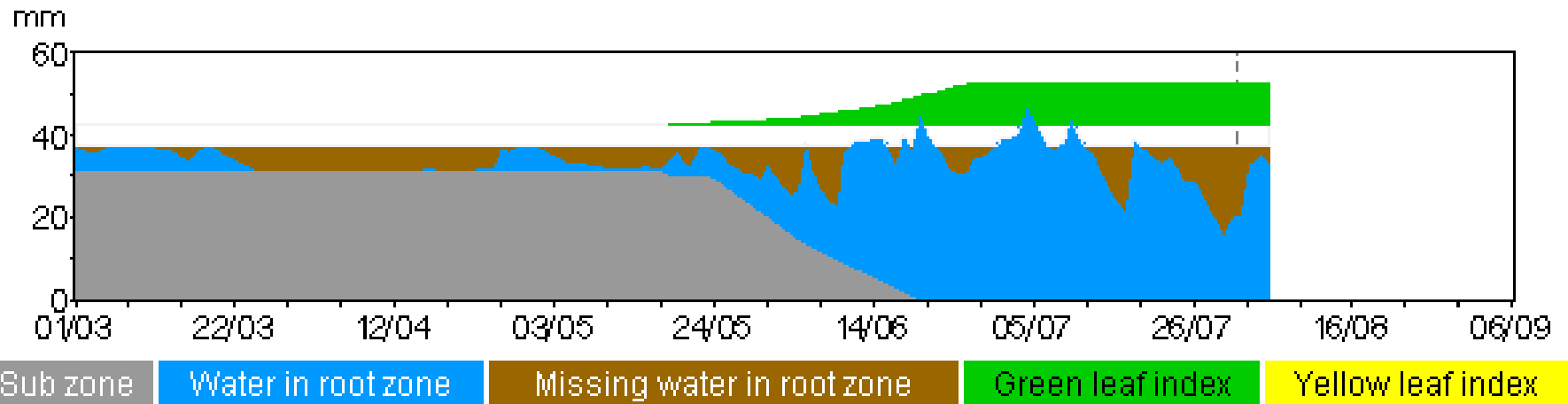
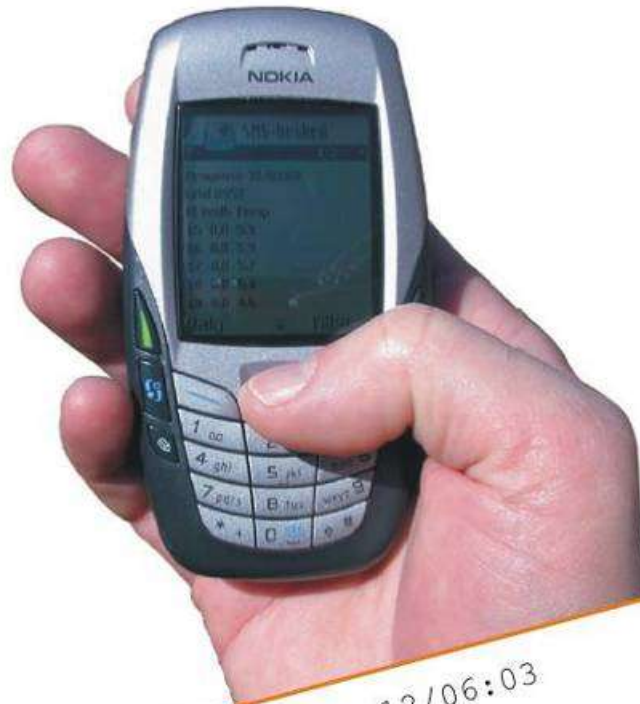


Fig. A. Soil water and leaf index [Explanation \(in Danish\)](#)

# PlantInfo mobil

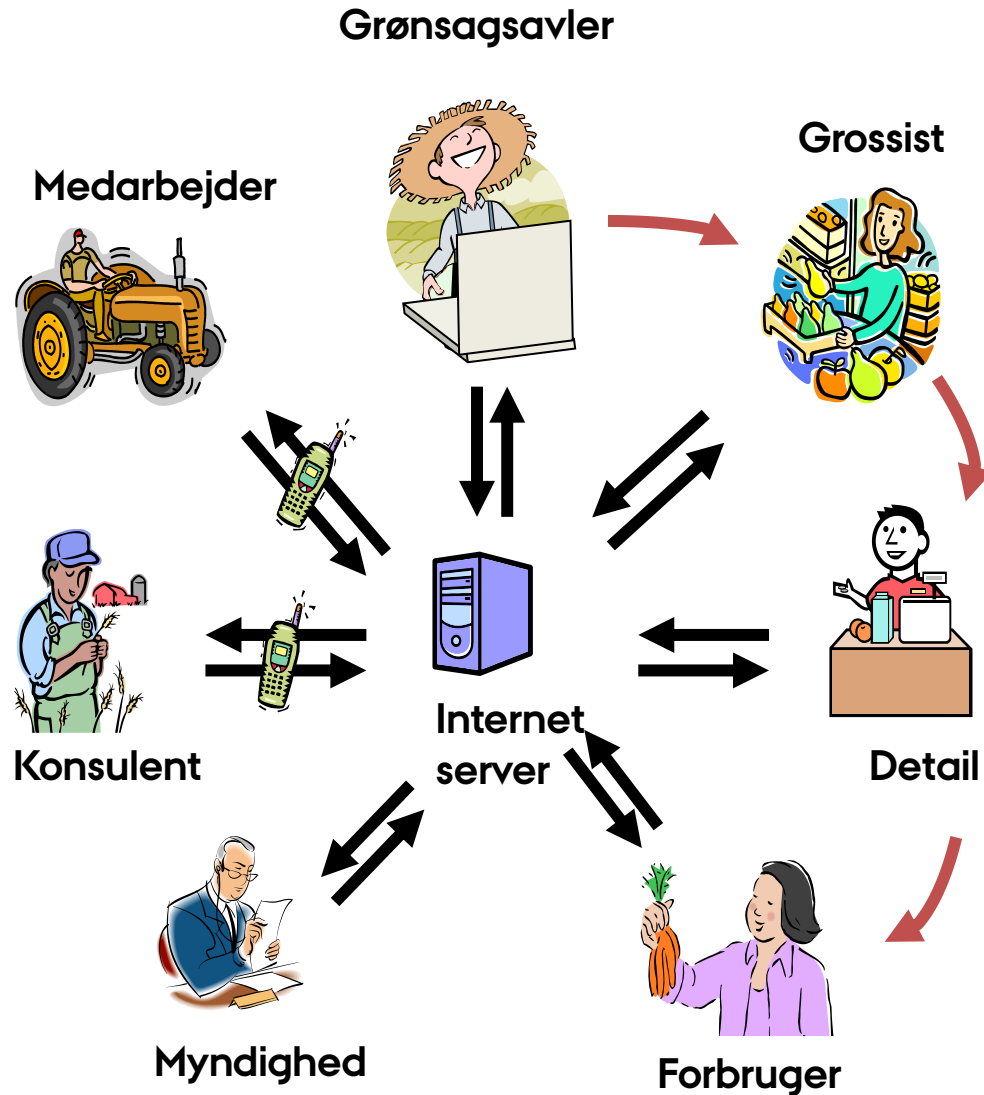


# PlanteInfo – SMS formidling



Prognose 12/06:03  
Grid 1000  
Kl Nedb Temp Fugt Vind Retn  
9 0.0 15.4 74 4.0 V  
10 0.0 16.4 67 4.9 V  
11 0.0 16.7 65 5.3 SV  
[www.planteinfo.dk](http://www.planteinfo.dk)

# Grønt og Frugt IT (GroFrIT)



# Høstprognose, blomkål (avleren)



## Harvest forecast, cauliflower

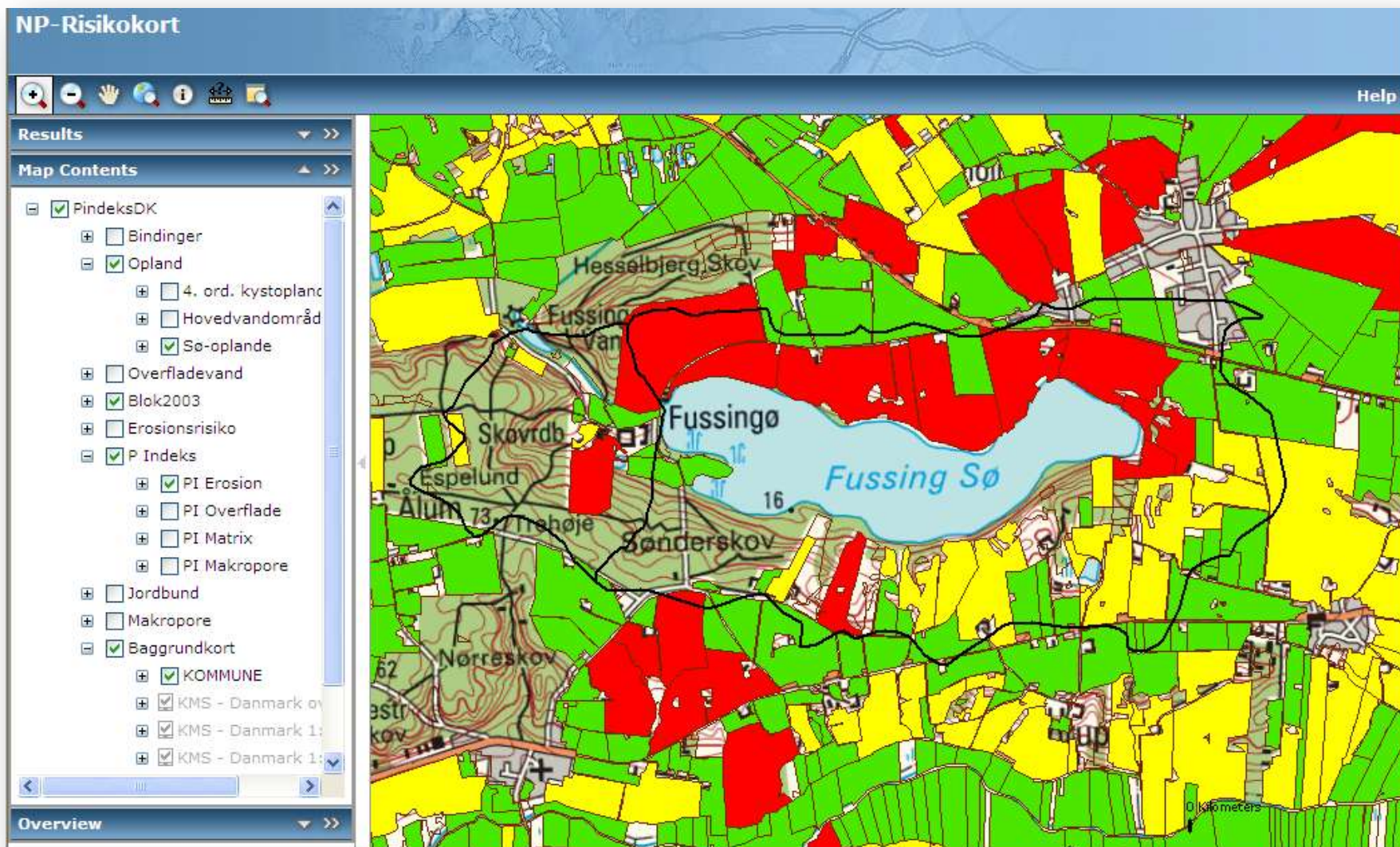
Subfields	AMIS grid no.	Team	Cultivar		Planted		Sample		Harvest diameter	Forecast harvest		
			Name	Type	Date	Number	Date	Diam.		Date	Day	Week
1:2-8	950	24-05	Aviron	Early	280405	5000	180505	26	140	100605	Fri	23
1:1, 2:1-3	948	24-05	Amsterdam	Medium	030505	5000	200505	15	140	160605	Thu	24
3:1-8	950	15-05	Arizona	Medium	030505	6500	200505	15	140	160605	Thu	24
15a:4-12	948		Aviron	Early	100505	8000	270505	10	140	230605	Thu	25
15b:1-16	948	33-05	Baldo	Medium	120505	10000	270505	6	140	280605	Tue	26

# Høstprognose, blomkål (grossist)

Week	No. crops	No. curds
23	2	6000
24	5	17700
25	1	8000
26	1	10000

Grower	Forventet høst (1000 stk.)						
	Denne uge						
Gert Gartner							
Henivejret							
Henivejret							
Gert Gartner	Amsterdam	5000	140	160605	Thu	24	
Gert Gartner	Arizona	6500	140	160605	Thu	24	
Henivejret	Baldo	3000	150	160605	Thu	24	
Henivejret	Fastnet	1500	145	160605	Thu	24	
Gert Gartner	Aviron	8000	140	230605	Thu	25	
Gert Gartner	Baldo	10000	140	280605	Tue	26	

# NP-Risikokort.dk



# MoVeTracker – Mobile Vehicle Tracker



# FAO – Global Wheat Rust Monitoring



Food and Agriculture  
Organization of the  
United Nations  
*for a world without hunger*

## RUST SPORE A Global Wheat Rust Monitoring System



STEM (BLACK) RUST

Google™ Custom Search

FAO Home

Rust Report

Rust Mapper

Pathotype Tracker

Pathotype Frequency  
Graph

Race Summary

Race Analysis

Differential Sets

Race Nomenclature

Effective Sr Genes

Rust Resources

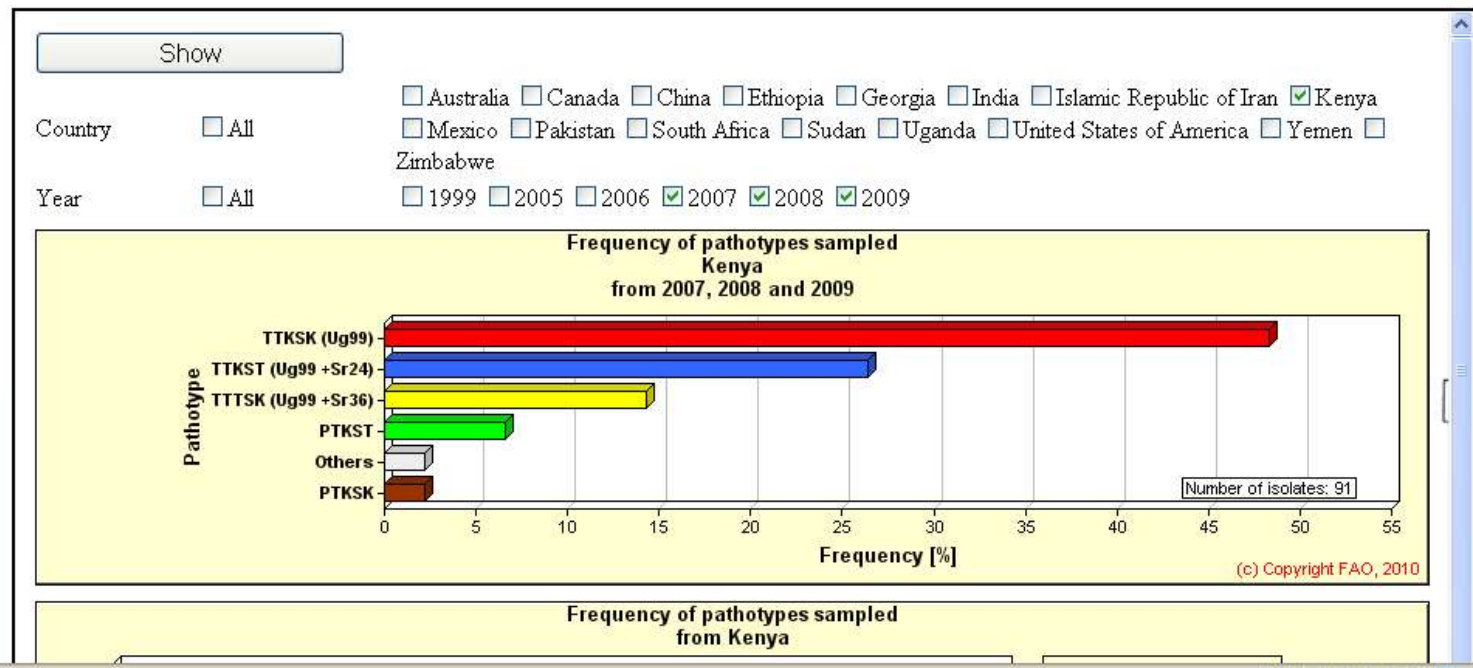
Contact

Login

### PATHOTYPE SAMPLE FREQUENCY TOOL

This pathotype information tool, developed by the **University of Aarhus Denmark**, displays the frequency of Ug99 lineage pathotypes in analysed samples. Selection of any specific combination of country(s) or year(s) is possible. Any new data incorporated into the underlying database will automatically be displayed on the graphs [NB: In the current implementation the mapping tool only covers East Africa].

**NB: For simplicity, any non Ug99 lineage pathotypes have been assigned into an "Others" category. In addition, only selective stem rust pathotype data were available for some countries. Hence these graphs do not represent absolute stem rust pathotype frequencies at the country level.**



# FAO – Global Wheat Rust Monitoring

## Wheat Rust Toolbox

Home Input Partners



### The Wheat Rust Toolbox



The Wheat Rust Toolbox is hosted by Aarhus University to support the Global Wheat Rust Monitoring program operated by FAO. The toolbox will hold databases, display applications and web data-entry forms for its partners.

All results will be disseminated via the FAO information system [RUST SPORE A Global Wheat Rust Monitoring System](#).

#### Contact Details

For more information about the Global Cereal Rust Monitoring System at FAO, please contact:

Wheat Rust Disease Global Programme  
FAO, AGP Division, Room C797,  
Viale delle Terme di Caracalla,  
00153, Rome, Italy  
Tel: +39 06 57052230  
Fax: +39 06 57055271

Email: [wheatrust@fao.org](mailto:wheatrust@fao.org)

25 August 2010

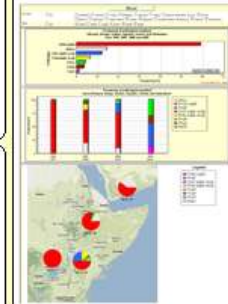
### Login

Login name:   
Password:

Login

Forgot your password?

### Pathotype frequency



The Pathotype Sample Frequency Tool was launched in August 2010 and it is available on RUST SPORE [here](#)

### Collaboration between FAO, CIMMYT and Aarhus University



The collaboration between FAO and Aarhus University, Denmark include collaboration with the Global Rust Reference Centre (GRRC), to be established at Aarhus University 2010/11.

The Wheat Rust Toolbox, the Rust Spore information platform and the Global Rust Reference Centre (GRRC) are parts of the Borlaug Global Rust Rust Initiative.

Activities will include the development of common database platform + tools, on-line data entry, potential Global Ref Centre Stem Rust, Close linkage stem and yellow rust re information, inclusion of climate based disease risk models? and continued expansion, strengthening of global network

### Surveillance



A wheat rust surveillance database including a web based data entry tool will be operational later this year. The database will be integrated with the RUST SPORE information system at FAO and the RustMapper system organised by CIMMYT.

Web site provided by Aarhus University, Faculty of Agricultural Sciences, Department of Agroecology and Environment.

Report technical problems to webmaster: [Poul Lassen](mailto:Poul.Lassen).

Optimized for screen size 1024x768

# Andre eksempler ...

# PlantInfo i Baltikum og Polen

PI@ntelInfo: Potato Late Blight, risk - Netscape

File Edit View Go Communicator Help

## Potato Late Blight, risk

Emergence date: June 4

Values on the map: Accumulated risk value

Update map: OK

1999.6.4 — 1999.6.26

Click on the map to see the development

Document: Done

PI@ntelInfo: Temperatura 2m aukstyje - Netscape

File Edit View Go Communicator Help

Bookmarks Location: ?\_Service=PI&\_Program=saslib.Balticum/temperature.sas&item\_id=11005&lang=lt&session=0

Paspauskite i taska norimoje vietoveje ir matysite pakitimus tam tikrame laikotarpyje.

## Lietuvos zemdirbystes institutas

Lietuvos zemdirbystes instituto Informacija

Vezaiciu meteoduomenys nera pilnai korektiski (matuojama per didele santykinę dregne), todėl bulviu maro rizika prognozuojama netiksliai.  
Traku Vokeje automatinė meteorologinė stotis pradėjo dirbti vėliau nei sudygo bulves, todėl čia dar nerodomas išėjimas dėl bulviu maro plitimo. Iš tiesų Traku Vokeje jau rastas bulviu maras (žiurekite meniu punkta stebėjimai).

Systema parosta bendradarbiaujant [PI@ntelInfo](#) ir [Lietuvos zemdirbystes institutui](#).

Techninis webmeistras: [planteinfo@agrsci.dk](mailto:planteinfo@agrsci.dk)  
Ataskinigas Lietuvoje: Kestutis Tamosiunas

Document: Done

# Animeret nedbørsprognose

## Nedbørprognose



Prognosefilmen for nedbør viser prognosen time for time ifølge 2-døgnprognosen.

På bjælken over Danmarkskortet kan man klikke sig ind på de enkelte timer i filmen. Farven på timen angiver prognosen for mængden af nedbør for den definerede *Her bor jeg*.

Redaktionen vurderer, at små mængder nedbør optræder for ofte.

# SortInfo

SortInfo

30. august 2010 **PI@nteInfo**

Vælg afgrøde:

SortsValg

Download

Find sort

Vælg sorter

Vælg info

Hjælp

## Oversigt for vinterhvede (sorter i Landsforsøg 2010, nyeste data)

Ar	Udbytteforsøg 1)				Sygdomme (Observationsparceller) 2)					Dyrkningsegenskaber (Observationsparceller) 2)				
	Kerneudb. forholdstal	Stivelse, % i tørstof	Råprotein its.	Hektoliter vægt	Meldug dækning	Septoria dækning	Gulrust dækning	Erunrust dækning	Meldug i aks, dækning (%)	Modningsdato	Døde planter	Karakter for overvintring	Stråle længde	Lejesæd
	(fht)	(%)	(%)	(kg/hl)	(%)	(%)	(%)	(%)	(%)	(dato for)	(%)	(kar. 1 - 9)	(cm)	(kar. 0 - 10)
Sortering														
1. <a href="#">Hereford</a>	108 (4)	70,6 (3)	9,8 (3)	74,9 (3)	6 (11)	11 (13)	0 (2)	13 (3)		2/8 (6)	0,1 (10)	7	76 (5)	0,0 (3)
2. <a href="#">Mercedes</a>	108 (4)	69,2 (3)	10,1 (3)	74,8 (3)	10 (11)	6 (13)	0 (2)	21 (3)		3/8 (6)			79 (5)	0,0 (3)
3. <a href="#">KW 3344-5-05</a>	108 (4)	68,9 (3)	10,7 (3)	77,2 (3)	4,4 (11)	8 (13)	0 (2)							
4. <a href="#">13011_21</a>	107 (4)	70,2 (3)	10,4 (3)	76,0 (3)	10 (11)	7 (13)	0,3 (2)							
5. <a href="#">Alfaromero</a>	106 (4)	69,9 (3)	10,3 (3)	74,5 (3)	11 (11)	4,6 (13)	0 (2)	23 (3)		3/8 (6)	0,0 (10)	8	83 (5)	0,2 (3)
6. <a href="#">Ambition</a>	106 (4)	70,4 (3)	10,0 (3)	74,3 (3)	14 (11)	4,7 (13)	0 (2)	12 (3)	0,1	2/8 (6)	0,3 (10)	7	80 (5)	0,0 (3)
7. <a href="#">Marselis</a>	105 (4)	69,9 (3)	10,0 (3)	72,6 (3)	1,6 (11)	8 (13)	0 (2)	10 (3)		2/8 (6)			82 (5)	2,0 (3)
8. <a href="#">Jensen</a>	105 (4)	70,4 (3)	9,9 (3)	76,1 (3)	1,4 (11)	6 (13)	0 (2)	14 (3)		3/8 (6)			84 (5)	0,2 (3)
9. <a href="#">Mariboss</a>	105 (4)	69,3 (3)	10,4 (3)	73,7 (3)	7 (11)	4,3 (13)	0 (2)	3,3 (3)		3/8 (6)	0,0 (10)	8	83 (5)	0,0 (3)
10. <a href="#">KWS Santiago</a>	105 (4)	69,4 (3)	9,9 (3)	72,9 (3)	7 (11)	14 (13)	0 (2)							
11. <a href="#">SJ 07-42</a>	104 (4)	70,5 (3)	9,7 (3)	75,7 (3)	3,3 (11)	6 (13)	0 (2)							
12. <a href="#">Timaru</a>	103 (4)	70,0 (3)	10,3 (3)	75,9 (3)	0,2 (11)	7 (13)	0 (2)	0 (3)		1/8 (6)	0,0 (10)	8	70 (5)	0,0 (3)
13. <a href="#">Ellvis</a>	103 (4)	69,7 (3)	10,7 (3)	77,1 (3)	4,7 (11)	4,6 (13)	0 (2)		5					
14. <a href="#">KWS Yaris</a>	103 (4)	69,2 (3)	9,9 (3)	75,0 (3)	5 (11)	7 (13)	0 (2)	7 (3)		3/8 (6)			77 (5)	0,0 (3)
15. <a href="#">Expert</a>	102 (4)	70,4 (3)	10,2 (3)	74,4 (3)	9 (11)	10 (13)	0 (2)	0,3 (3)		1/8 (6)	0,9 (10)	6	76 (5)	0,7 (3)
16. <a href="#">Conguoror</a>	102 (4)	70,1 (3)	9,9 (3)	73,7 (3)	11 (11)	13 (13)	0 (2)	10 (3)		2/8 (6)	0,4 (10)	7	72 (5)	0,5 (3)
17. <a href="#">SJ 08-45</a>	102 (4)	69,4 (3)	10,9 (3)	74,3 (3)	5 (11)	10 (13)	0 (2)							

# SortsValg

## Bemærk

SortsValg beregner det økonomiske resultat for de enkelte sorter v.h.a. modeller, der ikke kan tage hensyn til alle forhold. Derfor sker anvendelse af informationer fra systemet på  **eget ansvar**.

Med knappen **'Forudsætninger'** kan du ændre forudsætningerne for beregningen (f.eks. udbytniveau og priser), så de passer for din bedrift.

Vælg afgrøde:

SortInfo

Forudsætninger

Vælg sorter

Vælg info

Hjælp

## Beregnete resultater for vinterhvede (Sorter i Landsforsøg, 2007 – 2009)

Sortering	Økonomi 3)				Sygdomsbehandling 3)	Kvalitetsregulering 3)			Målte dyrkningsegenskaber (Fra udbytteforsøg) 1)	
	Udbytte, korr. for udgifter til udsæd, ekstra N, og svampemidler (kr/ha)	Udbytte (kr/ha)	Omk. svampemidler inkl. udbringning (kr/ha)	Omk. svampemidler (kr/ha)	Forv. antal behandlinger	Korrektion f. råprotein (kr/hkg)	Korrektion f. hektolitervægt (kr/hkg)	Kornpris korrigeret for råprotein og hektolitervægt (kr/hkg)	Råprotein i ts. (%)	Hektolitervægt (kg/hl)
1. <a href="#">Hereford</a>	5.904	6.662	376	252	1,9	0,00	-0,03	79,97	9,4	77,7
2. <a href="#">Timaru</a>	5.747	6.448	319	202	1,8	-4,50	0,00	80,50	9,8	78,5
3. <a href="#">Oakley</a>	5.694	6.600	524	335	2,9	0,00	-0,38	79,62	9,2	76,7
4. <a href="#">Torkil</a>	5.694	6.504	428	279	2,3	-3,60	0,00	81,40	10,0	78,1
5. <a href="#">Tabasco</a>	5.651	6.435	402	252	2,3	-4,50	-0,36	80,14	9,8	77,2
6. <a href="#">Conqueror</a>	5.634	6.496	480	311	2,6	0,00	-0,49	79,51	9,3	76,4
7. <a href="#">Mariboss</a>	5.631	6.441	428	279	2,3	0,00	-0,77	79,23	9,4	75,5
8. <a href="#">Blanding,vi-hved</a>	5.630	6.440	428	279	2,3	-4,50	0,00	80,50	9,8	77,8
9. <a href="#">Fru ment</a>	5.607	6.437	448	292	2,4	0,00	-0,63	79,37	9,6	76,0
10. <a href="#">Contact</a>	5.604	6.424	438	288	2,3	0,00	0,00	80,00	9,5	78,4
11. <a href="#">Smuggler</a>	5.571	6.303	350	233	1,8	-4,05	-0,96	79,99	9,9	76,2
12. <a href="#">Alfaromero</a>	5.535	6.315	398	249	2,3	-4,50	-0,96	79,54	9,8	76,2
13. <a href="#">Ambition</a>	5.528	6.359	449	280	2,6	0,00	-0,21	79,79	9,7	77,2
14. <a href="#">Inspiration</a>	5.525	6.355	448	292	2,4	-4,05	0,00	80,95	9,9	78,4
15. <a href="#">Smaragd</a>	5.519	6.314	413	270	2,2	-4,05	0,00	80,95	9,9	79,7

# Soil Compaction

