



Knowledge grows

Vegetable Growing in Denmark

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Agenda

- Presentation of Yara
- Growing conditions Estonia versus Denmark
- Market situation
- Challenges and trends
- Customer expectations
- Examples of how Danish growers have tackled the challenges
- You are welcome to interrupt and ask questions

Yara in numbers

13,000
employees

Sales to over
150
countries

Revenue
NOK 108
Billion
(USD 13.5 Billion)
In 2015

We deliver a complete portfolio of offerings

What
We offer

Crop
Nutrition
solutions



Nitrogen
application
solutions



Environmental
solutions



Basic products

Ammonia

Urea

SSP

Nitric Acid

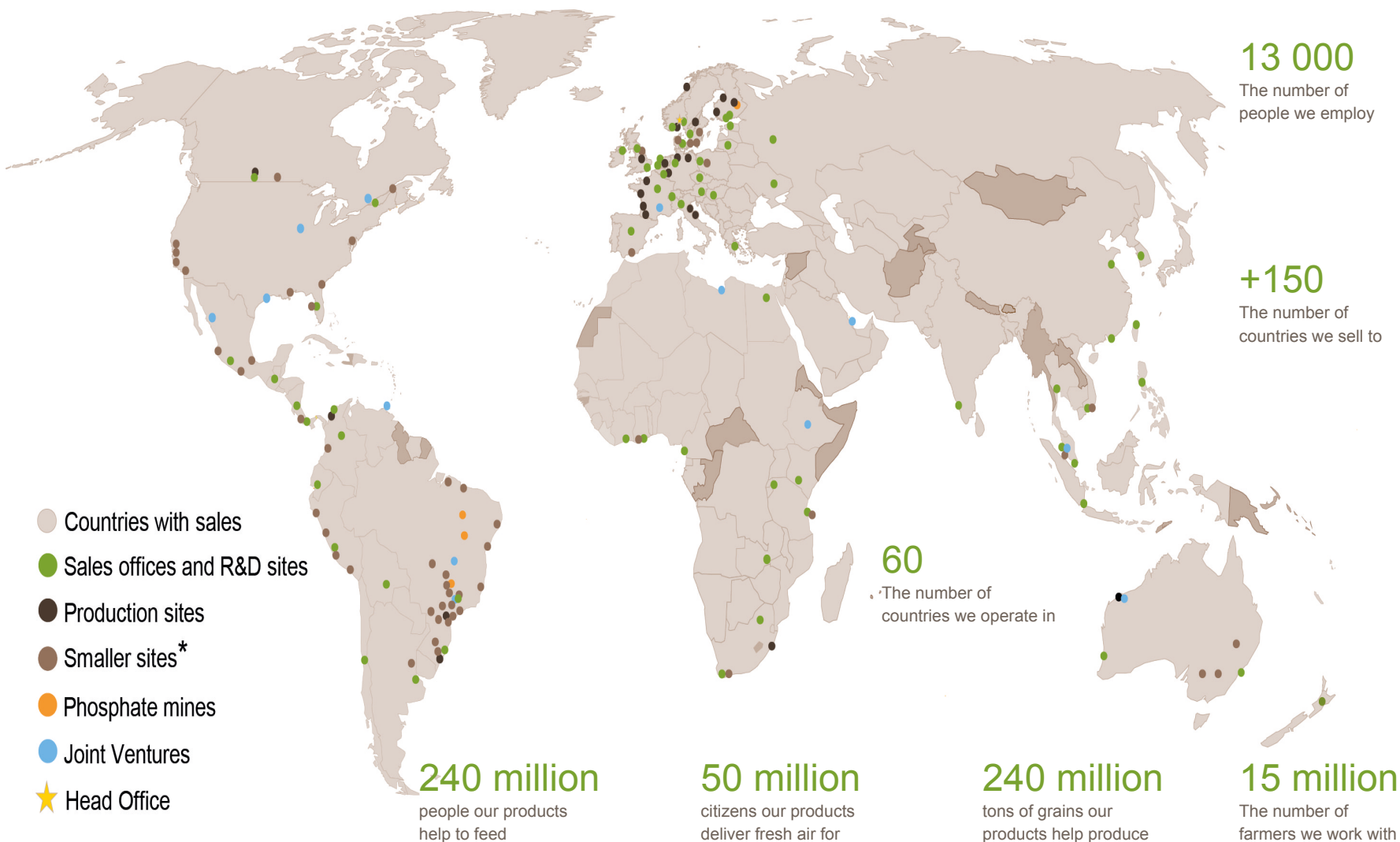
Nitrates

NPK

CN

TAN

Our global presence is growing



* Yara operated terminals and logistical production sites

Yara Eestis

Juha Sillanpää
Strateegiline piirkonna juht

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7
Keeled: Soome,
inglise

Tegevuspiirkond
Eesti, Läti, Leedu

Agnese Pinka
Agronoom

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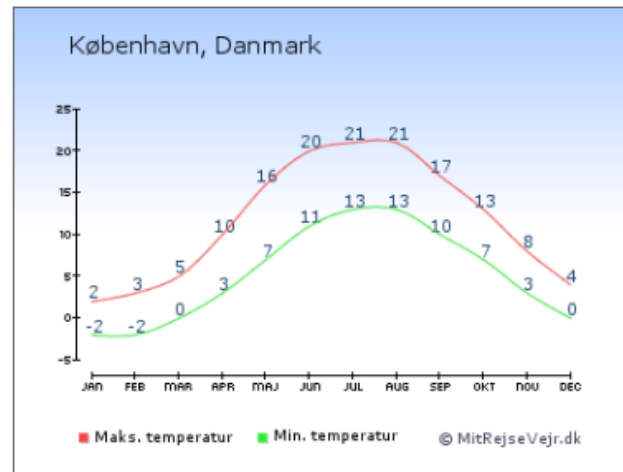
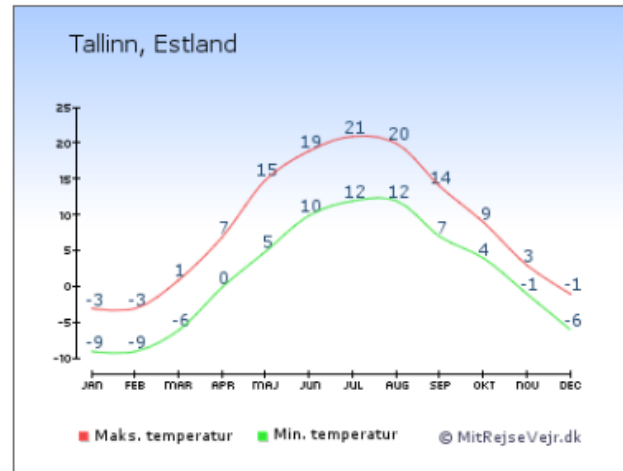
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vene, inglise

Tegevuspiirkond
Eesti, Läti, Leedu

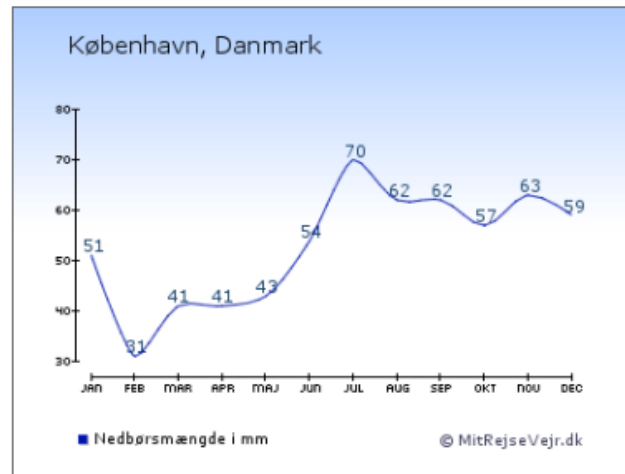
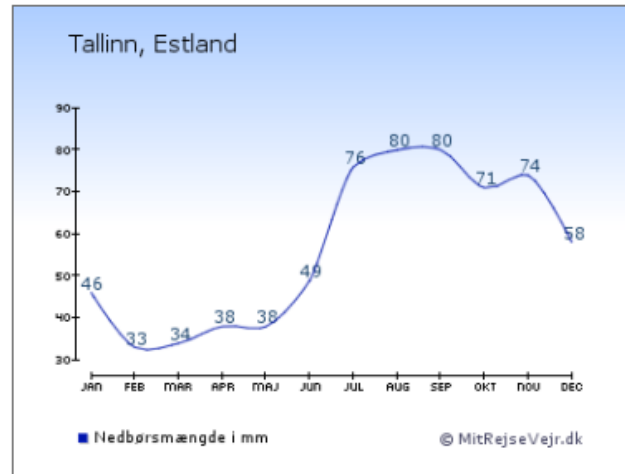
Yara product for Estonia vegetable market

- YaraMila Complex 12-11-18
- YaraMila Cropcare 11-11-21
- YaraMila Cropcare 8-11-23
- YaraLiva Nitabor
- YaraLiva Tropicote
- YaraLiva Calcinit
- YaraHevi NK1
- WS Ferticare, several grades
- Krista K

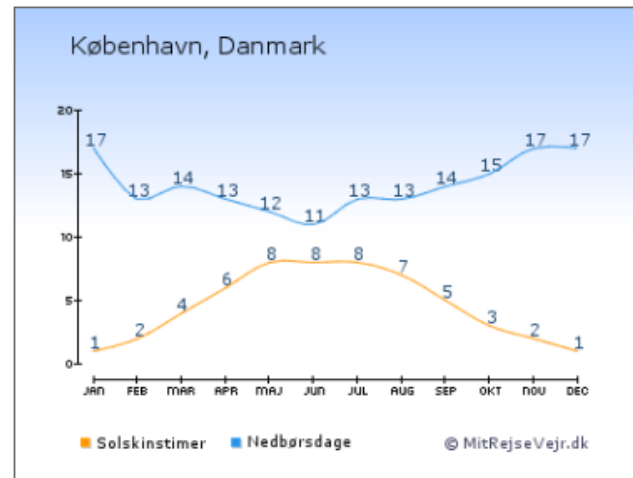
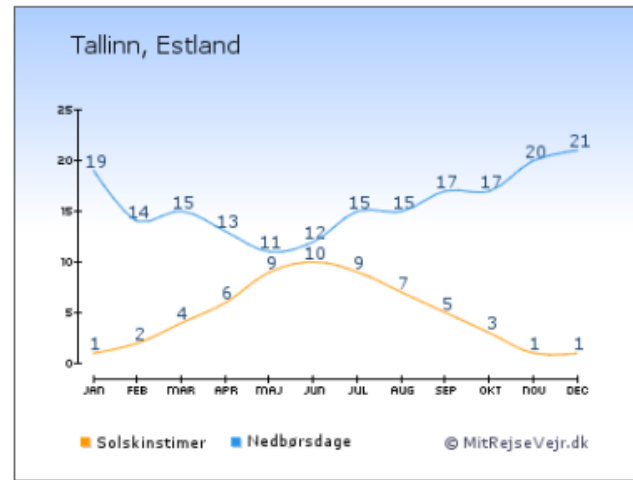
Average temperature Tallinn and Copenhagen



Average yearly rain in mm Tallinn: 677 mm Copenhagen: 634 mm



Average hours of sunshine per day and days with rain



Area of open field vegetables in Denmark

			2003	2015	2016
			ha	ha	ha
Cauliflower			415	341	365
Broccoli			249	328	357
White, pointed & savoy cabbage			424	506	524
Red cabbage			172	159	187
Chinese cabbage			183	54	63
Kale			59	84	78
Brussels sprouts			74	31	31
Leeks			350	316	354
lettuce			409	518	696
Spinach				161	164
Asparagus			49	151	180
Celery			34	57	59
Large cucumber			77	57	68
Squash			20	40	26

Area of open field vegetables in Denmark

			2003	2015	2016
			ha	ha	ha
Carrots			1191	2034	2235
Onions			1471	1409	1500
Celeriac			155	119	91
Jerusalem artichoke			21	139	147
Beetroot			200	339	320
Parsnips			51	199	174
Parsley			66	171	112
Peas			3000	2827	2992
Herbs			248	157	97
Sweet corn			205	332	445
Strawberry			916	1235	1183

Vegetables for industry

- Several production sites is closed
- Production of frozen peas is reduced from 12.000 ha in the eighties to 3.000 ha today
- Fried and frozen onion production moved to Holland and France
- Beauvais move production of red cabbage and large cucumber to Austria

Production and consumption of vegetables in Denmark 2003

	Production	Imports	Export	Consump.	Per cap.
	tons	tons	tons	tons	kg
W. & R. cabbage	23.763	7.864	1.179	30.447	5,7
Brussels sprouts	478	397	4	871	0,2
Caulifl. & Brocc.	6.658	10.806	1.035	16.429	3,0
Leeks	5.631	5.625	287	10.969	2,0
Celeriac	3.023	1.199	11	4.211	0,8
Beetroot	6.394	1.592	1.500	6.486	1,2
Carrots	54.623	11.249	2.403	63.469	11,8
Onions	53.014	14.083	16.726	50.371	9,4
Chinese cabbage	3.726	7.810	506	11.030	2,0
Lettuce	19.370	24.535	1.743	42.162	7,8

The Danish market for groceries 2012

Concept	Coop	Dansk Su	Dagrofa	Reitan	Aldi	Lidl	Others	Market %
Hypermart.		Bilka						6,1
Superma.	Kvickly..	Føtex	Meny				Løvbjerg	48,8
Discount	Fakta	Netto	Kiwi	Rema	Aldi	Lidl		37,0
Minimark.	Brugsen		Spar				Other	8,1
Market %.	37,4	32,5	15,6	6,8	3,3	2,4	2,0	100,0

Challenges and trends

- Retailers are very powerfull
- Bigger demand for organic products
- Catering can provide new markets
- Farms shops (good traffic location and big assortment is important)
- Food boxes (Årstiderne)
- Farm becomes larger and more specialized
- Bigger machines
- Controlled Traffic Farming
- Precision farming Yara N-sensor
- More intensive use of advisors
- IPM (Integrated Pest Management)
- Use of varning systems pest and disease threshold water traps blue and orange glue plates and pheromone traps
- Require high quality of the seed to ensure uniform vegetables
- Strawberry growers grow more in tunnels and use of fertigation

Customer expectations today and in coming years

- Convenience (washed vegetables)
 - New products
 - Recipes with information about use and cooking
 - Better packaging materials that is easy close again
-
- An analysis made by the institute First Movers Show:
 - First Movers represents 3% of the population they perceive new trends very fast and invent new trends by themselves
 - Vegetables will make the biggest part of the daily food consumption in the future
 - Vegetables will be the leading factor, followed by dairy products and meats as number three
 - Freshness is very important and more focus on herbs and cabbage
 - Convenience is important too
 - Local produktion

DanRoots

- Owner Klaus Vestergård is 3. generation grown root vegetables at the farm since 1955
- Started as a small farm, the main part of the land is rented
- Grow 700 ha with carrots, parsnip, parsley, beetroot and jerusalem artichokes
- 35 permanent employees, 100 - 125 employees calculated at yearly basis
- Danroots have 50% of the Danish and 20% of the German market for organic carrots
- Products for delivery from end of November to next sommer is stored in the field covered by straw
- They use 60 tons straw per ha for covering the crop
-



Gyldensteen

- Has grown onions for many years
- Have started growing of halloween pumpkins few years ago
- And is now trying with white garlic
- Beside the vegetables production has they established a trading house
- They grow 225 ha with onions and 70 ha with halloween pumpkins
- 25 employees



Thorsbjerggaard

- Owner Peter Brødsgaard, his birthplace, start at the farm in the eighties
- Chose vegetables growing instead of livestock
- Started with several different vegetables and sweet corn sold at "Grønttorvet" Copenhagen
- Have now specialized in sweet corn and haloween pumpkins
- Test new sweet corn varieties at the farm to adapt to the market
- Grow diffent type e.g. white, bicolor gourmet sweet corn and baby sweet corn
- Used planted sweet corn to start the season earlier
- 6 permanent employees, 30 employees in the season
- 100 ha owned and 140 ha rented
- Haloween pumpkins 32 ha
- Peas 10 ha
- Red onion 10 ha
- Sweet corn 90 ha
- Kale 2 ha
- Cereals and oil seed rape 106 ha

Esromgaard

- Owner Carl Bruun 3. generation took over the farm in 1992, 575 ha
- 1995 build new stabels for pigs the neighbors did not like the smell
- 2012 stopped pig production switch to strawberry and farm sale
- Extended with potatoes, peas and some garlic and green asparagus
- 2 permanent employees plus workers in the season to pick the strawberry and sale
- Direct sale to consumer from the farm and 4 booth





Knowledge grows

Thank you for your attention