

Innovation Centre  
for Organic Farming

# Visite de France, 02. – 03 Octobre 2023

Réunion a  
Innovation Centre for Organic Agriculture  
2. Octobre 2023



STØTTET AF

Fonden for **økologisk landbrug**

- **PROGRAMME, Visit from France, 2. October 2023, AFP**

- **Presentation of participants**

- Presentation of our companies FNAB (Fiona) ICOEL (Sofie Knorr Jensen).
- Research on organic poultry production at Aarhus University, (Sanna Steinfeldt)

- **Organisation Dk**

- Danish Agriculture & Food council (Farmers general organization)
- Agro Food Park,
- Danish Poultry (Poultry farmers org.)
- Danish Eggs (Egg industry),
- Organic Denmark

- **Organic rearing and - egg production in Denmark, Niels Finn**

- **Situation in France,**

- Organizations, Fiona Marty
- Organic rearing and egg production in France, Fiona Marty



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# The centre for developing organic agriculture in Denmark

Background, purposes and areas of work





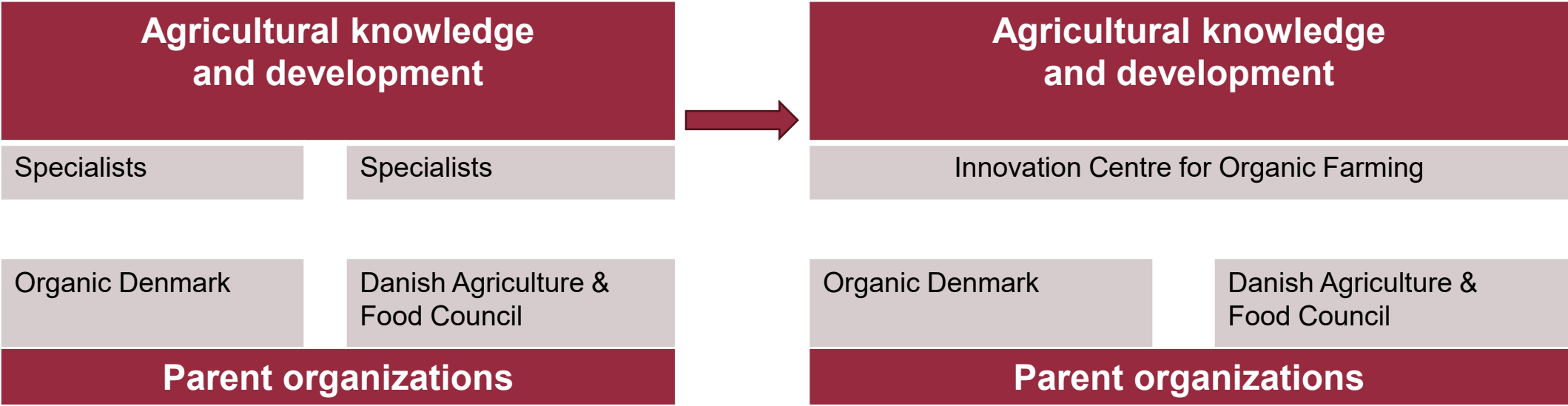
# Background

- A centre for developing organic farming in Denmark
- Created as a fusion of the agricultural specialists from departments in Organic Denmark and the Danish Agriculture & Food Council
- Established 1st October 2021 as a nonprofit research organization

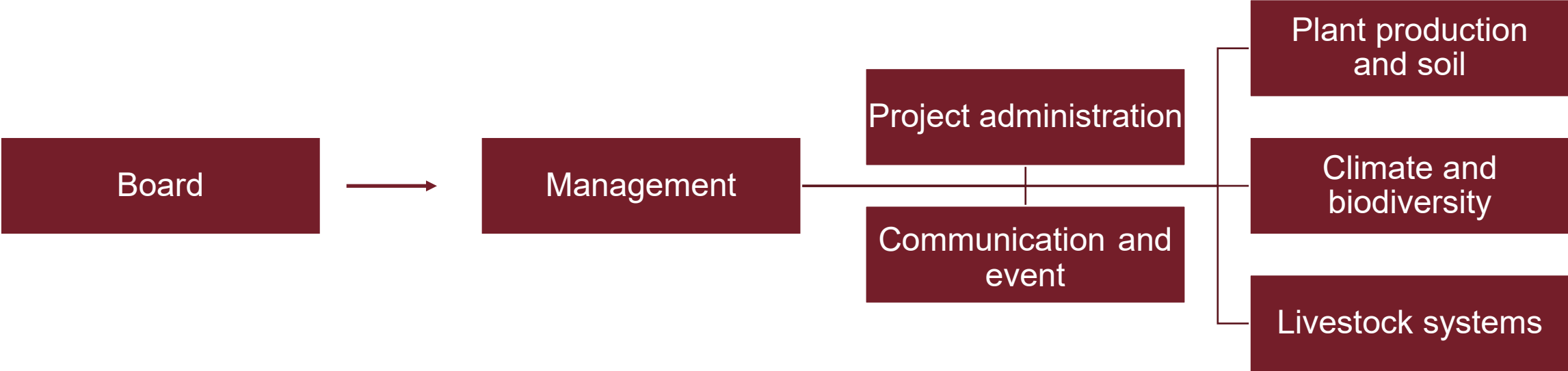


Photo: Agro Food Park

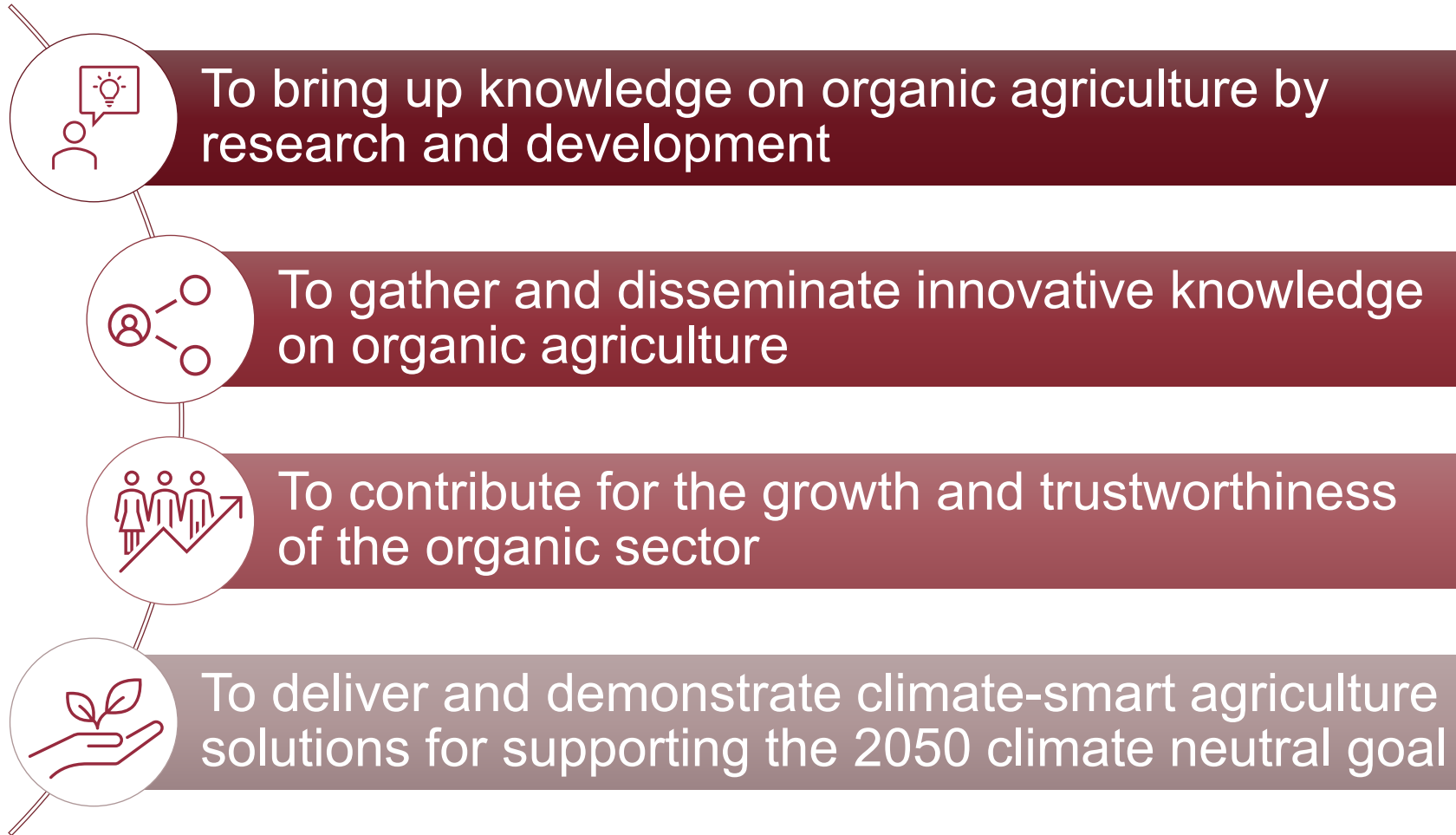
# Gathering our forces:



# How we are organized



# Our commitments



# Our principles in practice



Holistic and interdisciplinary working for cradle to cradle



Research and development based on the global organic principles: Health, fairness, ecology and care



Independent of other interests



Science and evidence based in accordance with good research practice, focused on organic farm implementation



Collaboration with scientific and value chain partners and stakeholders, both national and international



Photo: Karen Munk Nielsen





# Our partners



Organic farmers



Local agricultural advisory centers (e.g, Danish Agricultural Advisory Service)



Universities and other educational institutions



Companies producing and processing organic food



Local and regional municipalities



International organizations (e.g. IFOAM)



Photo: Anton Brander Lichtenberg

# Our focus is on

## Biodiversity and recycling

- + Reuse of waste products
- + Soil fertility
- + Development of resilient solutions
- + Functional- and agro-biodiversity

## Crop production

- + Soil fertility, nutrient flow, yield, quality
- + New plant varieties and food crops in a Danish context
- + Food, feed, bio-energy crops

## Innovative agricultural systems

- + Agroforestry
- + Strip-cropping
- + Intercropping agriculture
- + Regenerative agriculture
- + Nature farming
- + Mixed cropping
- + Conservation

## Self sufficiency

- + Animal feed production in Denmark
- + Plant production according to food basket

## Succession and transition to organic farming

- + Teaching at agricultural colleges
- + Showcasing young organic farmers

## Climate

- + Enhancing efficient strategies for reduction of climate footprint in the farming sectors

## Livestock systems

- + Special attention on animal welfare in all production sectors
- + Optimising sustainable systems



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# Organic rearing and - egg production in Denmark

Niels Finn





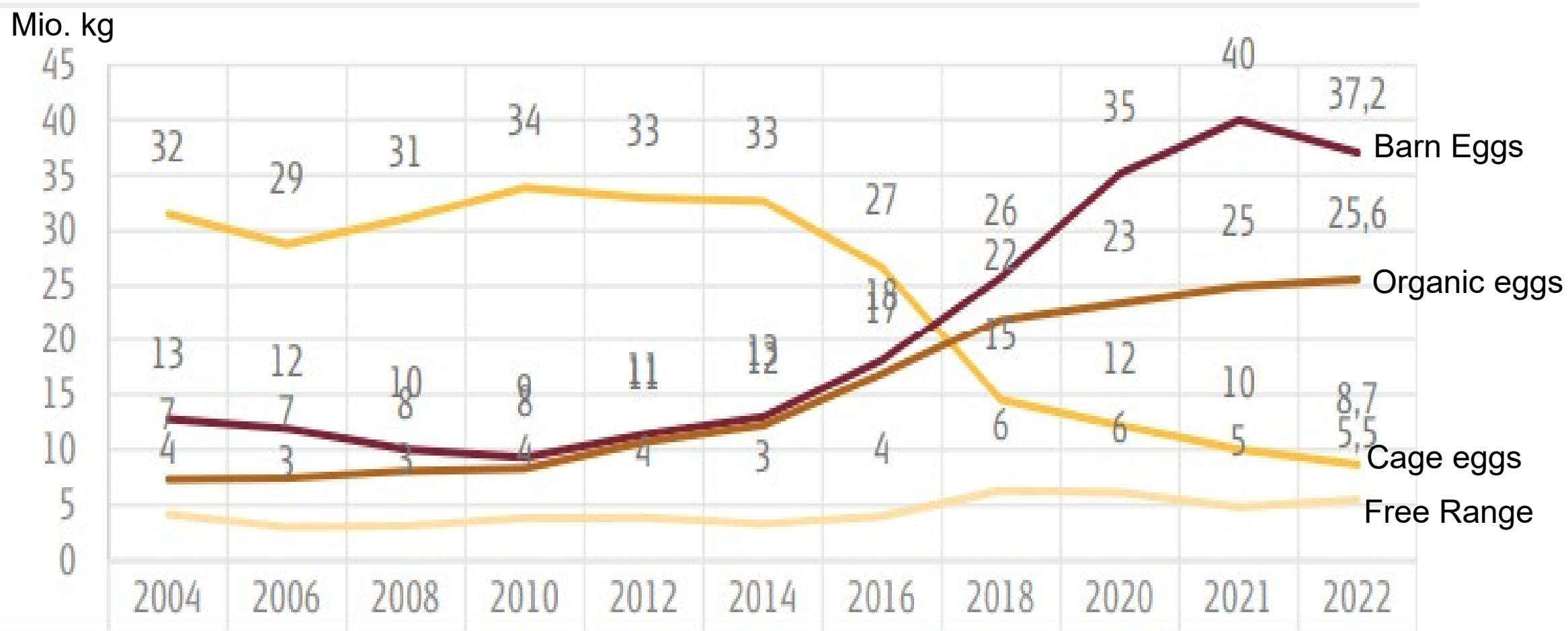
## • History of organic egg production in DK

- 1990. 10 organic farmers with 1.000 hens each. (Shared egg packing plant)
- 1991. Organic packing plant went bankrupt. Existing packingplants (Danæg) took over packing and marketing.
- 1991 – 2003.
  - The market for organic eggs grew
  - many farmers started organic egg production in existing buildings
  - use of conventional pullets

### Problems:

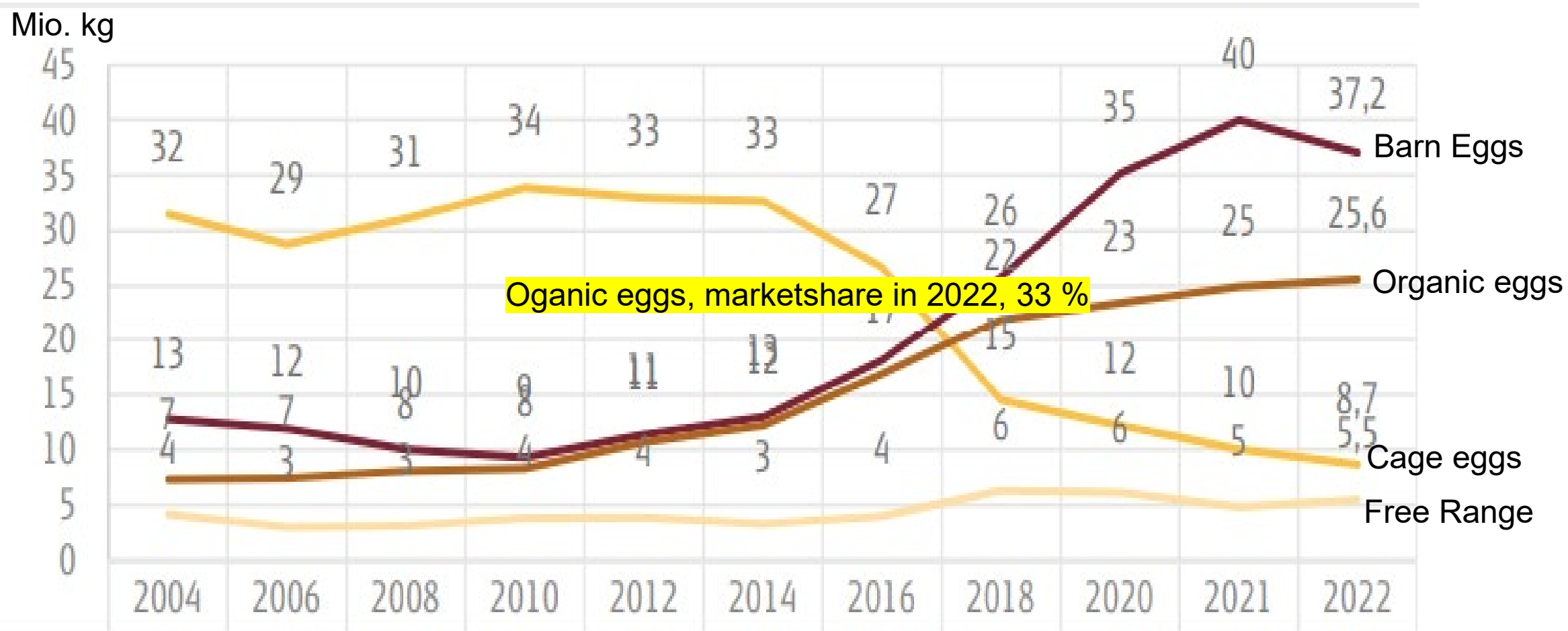
- mortality, featherpecking and canibalism
- diseases – coli, pasteurella, erysipelas, blackhead, parasites
- organic production not accepted by conventional farmers

## Production of eggs in DK 2004 – 2022, mio. kg



Kilde: Danmarks Statistik. ANI8: Ægproduktion og produktionsformer efter enhed og tid.

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- From 2003 obligatory organic rearing of pullets.
- Chickens reared under organic conditions from day 3.
- Organic feed
- Acces to outdoor area from live-week 6 -7, minimum area, 1 m<sup>2</sup> per pullet.
- Daylight in stable (windows)
- Pearches in rearing house
- 3000 chickens pr flock
- No beaktrimming
- No use of preventive medicine
- Vaccination allowed, - and used
- Density indoor, max 15 chickens/m<sup>2</sup> or max 21 kg/m<sup>2</sup>.



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Year	Mortality, %
1999	17,3
2005	11,9
2021	5,8

- **During rearing the pullet must be trained to function as an organic hen (Advice)**
- **Rearing system must look like the egg laying system.**
- **Same drinking and feeding system**
- **Train the chickens to jump/fly up**
- **No feed or water at floor level**
- **Teach the chickens to use the outdoor area, from 5 – 6 weeks of age**
- **Carefull with vaccinations**
- **Feeding-, vaccination - and lightprogrammes must be agreed with - and adapted to the egg producers wishes.**
- **Be social with your chickens, visit the rearing house so often as you can, this will create calm and trustful pullets.**

## • Vaccinations during rearing

- Day old in hatchery: Marek, Vaxxitek, Paracox 8, IB Ma5, IB 4-91
- \* Week 3.: ND C2, Spray or drinking water, OBLIGATORY
- \* Week 7.: IB Ma 5, Spray or drinking water
- Week 9.: ND C2, Spray or drinking water, OBLIGATORY
- Week 10.: Rhino TRT (Spray)
- Week 11.: Poulvac Coli, (Spray)
- Week 12.: IB-4-91.: Spray or drinking water
- Week 13.: AE, drinkingwater
- Week 15.: Poulvac Coli
- Week 17-18 at transfer: TRT, ND, EDS, IB-Multi (Gallimune) ND=OBLIGATORY
- Week 17-18 at transfer: Pasteurella and/or Erysipelas deoending on history at eggfarm?
- \* Salmonellavaccination is not allowed

Rearing report (example)													Daggammel :	SUPER START			
1-2 dg										24	20-40	36-35	60-70		Marek, vaxxitek, Parecox, Ma5, Ib 4-91.		
3-4 dg														1,0			
5-7 dg	38	22-09-22				72	75										
2	39	29-09-22				121	125	129	17	33	16	10-20	29-28	60-70	1,2		
3	40	06-10-22				183	190	197	22	44	14	10-20	27-26	60-70	1,2	ND C2 spray eller Hitchner i drikkevand.	A212cm 01
4	41	13-10-22				261	270	279	28	53	12	4-6	24-22	60-70	1,4		START
5	42	20-10-22				347	360	373	35	61	11	4-6	18-20	60-70	1,5		
6	43	27-10-22				449	465	481	40	70	10	4-6	18-20	60-70	1,6		
7	44	03-11-22				550	570	590	46	79	9	4-6	18-20	60-70	1,7	IB MA5 spray/drikkevand	A28982j02
8	45	10-11-22				647	670	693	50	88	9	4-6	18-20	60-70	1,8		VOKSE
9	46	17-11-22				738	765	792	54	95	9	4-6	18-20	60-70	1,9	ND C2 spray eller Hitchner i drikkevand	A212cm 01
10	47	24-11-22				825	855	885	57	100	9	4-6	18-20	60-70	2,0	Primer RHINO TRT (spray)	A057Bj02
11	48	01-12-22				907	940	973	59	105	9	4-6	18-20	60-70	2,1	Poulvac Coli (spray)	5265172
12	49	08-12-22				984	1.020	1.056	63	110	9	4-6	18-20	60-70	2,2	IB 4-91 spray/drikkevand	A340C1W01
13	50	15-12-22				1.060	1.098	1.136	64	116	9	4-6	18-20	60-70	2,3	AE vaccine nobilis - i drikkevand	109651
14	51	22-12-22				1.130	1.171	1.212	67	121	9	4-6	18-20	60-70	2,4		
15	52	29-12-22				1.193	1.236	1.279	69	126	9	4-6	18-20	60-70	2,5	Poulvac Coli (spray)	526572
16	1	05-01-23				1.255	1.301	1.347	70	128	9	4-6	18-20	60-70	2,6	FLYT TRT-ND-EDS-IB Multi (GALLIMUNE)	ANBEFAL FLYT
17	2	12-01-23				1.321	1.369	1.417	71	130	10	5-7	18-20	60-70	2,7	efter aftale	PRÆSTART
18	3	19-01-23				1.392	1.443	1.494	74	133	11	5-7	18-20	60-70	2,8	E 48284	ÆGSTART
19	4	26-01-23	10,0	44,0	1.468	1.521	1.574	80	136	12	5-7	18-20	60-70	2,9			
20	5	02-02-23	45,0	46,5	1.548	1.604	1.660	92	147	13	10-15	18-20	60-70	3,0			
21	6	09-02-23	65,1	48,9	1.614	1.673	1.732	96	158	14	10-15	22-24	60-70	0,1			
22	7	16-02-23	80,2	51,3	1.672	1.751	1.830	103	175	14-16	10-15	22-24	60-70	0,2			
23	8	23-02-23	88,3	53,5	1.709	1.795	1.880	108	200					0,3			
24	9	02-03-23	91,9	55,3	1.738	1.829	1.920	112	207					0,4	AE vaccine nobilis - i drikkevand		
25	10	09-03-23	93,0	56,6	1.752	1.844	1.936	119	214					0,5			
26	11	16-03-23	93,7	57,6	1.765	1.858	1.951	119	214					0,6			
27	12	23-03-23	94,2	58,4	1.770	1.863	1.956	119	214					0,7	LU 30 - IB Ma 5 + Poulvac Coli (drikkevand)		
28	13	30-03-23	94,6	59,1	1.776	1.869	1.962	119	214					0,8	LU 38 - IB 4-91		
29	14	06-04-23	94,9	59,7	1.779	1.873	1.967	119	208					0,9	LU 30 - IB Ma 5 + Poulvac Coli (drikkevand)		
30	15	13-04-23	95,2	60,0	1.784	1.878	1.972	119	208					1,0	LU 54 - IB 4-91		

Sendt: 22-09-2022

- # Høner der går i lægning fra Oktober i LYSTÆTTE STALDE, lysstimuleres til 14 timer lys. Efter Sankt Hans øges til 16 timer
- # Høner der går i lægning fra Maj-Oktober, lysstimuleres til 16 timer lys
- # Kråseflint tildes fra dgl., 3g hver 14 dag pr. kylling
- # Ved drikkevands vaccination, benyt Avil Blue



Pullets access to outdoor area





## Production systems laying period





# Rearing with "Liftable slats"





## Landmecco "christmas tree" system



# Light program

## EXAMPLE, LIGHTING PROGRAM FOR ALTERNATIVE SYSTEMS

Week	Brown hens	White hens
1	Intermittent 4 x (4 on / 2 off)	Intermittent 4 x (4 on / 2 off)
2	Intermittent 8 on/2 off // 8 on/ 6 off	Intermittent 8 on/2 off // 8 on/ 6 off
3	15	15
4	14	14
5	12	12
6	10	10
7	10	10
8	9	9
9	9	9
10	9	9
11	9	9
12	9	9
13	9	9
14	9	9
15	9	9
16	9	9
17	11	10
18	12	10,5
19	13	11
20	14	12
21	15	13
22	15	14
23	15,5	14
24	15,5	14

- For organic hens normally 10 hours light.
- In summer outdoor daylength is up to 17 hours (sunset about 23.00 o'clock)
- Windows in rearing house are covered during nighttime 23.00 - 13.00
- Chickens sleep until 13.00 \_ indoor light switches on, coverings at windows are removed and popholes to outdoor area are opened at 13.00.
- Purpose: To conduct a light program on one hand and to avoid problems getting pullets into the house at night. On the other hand

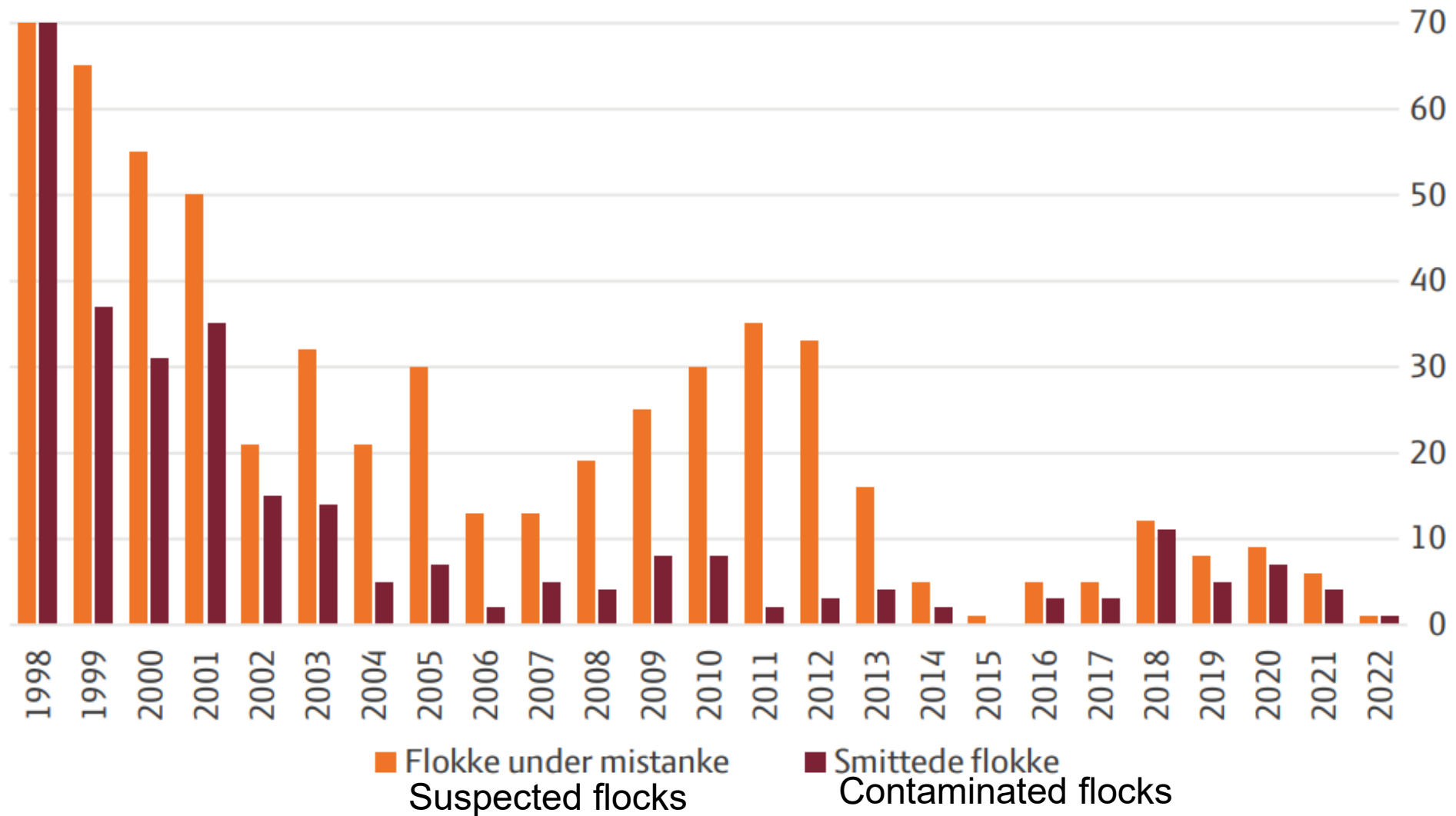


# Controlling of salmonella and avian influenza

- Sampling is done by the farmer himself.
- At 24 weeks, however sampling is done by a veterinarian from ministry.
- Samples are analysed at authorized laboratory
- Results of analysis are sendt to packingstation, and authorities.
- If positive, eggs from the infected flock can be marketed, only as heat treated egg products.
- Normally infected flocks are culled (slaughtered)

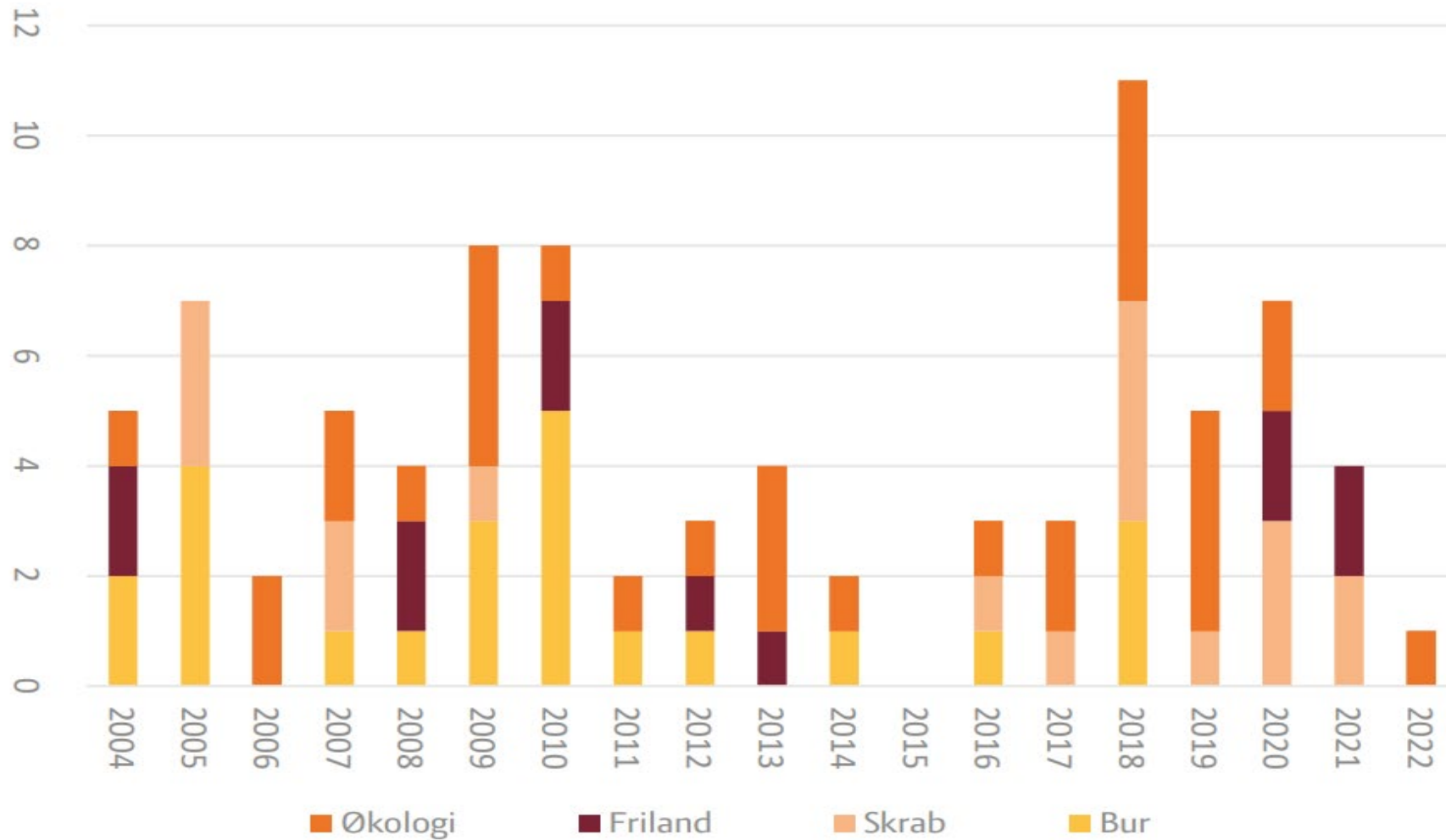
Salmonella control program:	Rearing	4. Weeks, Sock samples
8 Weeks, Sock samples	12 weeks, Sock samples	15 weeks, Sock samples
17, weeks, Sock samples	Laying period, sock samples every 2 weeks	Avian Influenza is controlled in bloodsamples at 15 weeks.

## History of salmonella, infected flocks



## No more Salmonella in organic flocks, than in conventional flocks

— Salmonella has not been found in rearing flocks for many years, including organic rearing



	Bur	Skrab	Øko
Antal hold i opgørelsen	7	27	19
Produktionsperiodens længde, dage (hønernes alder ved periodestart er 140 dage)	464,0	453,6	418,4
Gns. høner i % af indsatte (svarer til værdien for høner i % af indsatte til og med år 2016)	98,8	97,5	97,8
Høner, i % af indsatte	97,0	93,3	94,2
Døde, i % af indsatte	3,0	6,7	5,8
Æg, stk. pr. indsat høne i alt	429,5	408,2	375,9
Æg, stk. pr. indsat høne i 364 dage	345,1	335,7	327,8
Æg, kg pr. indsat høne	25,7	24,7	22,5
Æg, kg pr. årshøne	25,4	24,1	22,0
Æglægning, %	93,8	92,2	91,8
Æglægning i 364 dage, %	96,7	94,9	93,3
Ægvægt, gram	59,8	60,5	59,8
Foder, kg pr. indsat høne	50,6	53,4	50,3
Foder, kg pr. årshøne	51,3	54,7	51,4
Foder, kg pr. kg æg	2,0	2,2	2,2
Foder, gram pr. høne pr. dag	108,8	117,7	120,3

Dansk Fjerkræ, Årsstatistik 2022



# Increased welfare during avian influenza season

- Lockdown has occurred in 2020, 2021, 2022-2023 and is a major challenge for welfare in Danish flocks
- Knowledge on handling the national lockdown demand is acquired through interviews
- Knowledge is going into a guide for organic farmers



Photo: Tomas Fibiger Nørfelt



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