Changeover to Non-GMO Soya, experiences in Denmark.

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Sows – Straw based system

(Summer)

TRANSPONDER FEEDING AND NATURAL VENTILATION

STANDARD FARROWING HOUSE

Effect of changing to Non-GMO soya in sow diet.

Changes in health of sow herd observed:

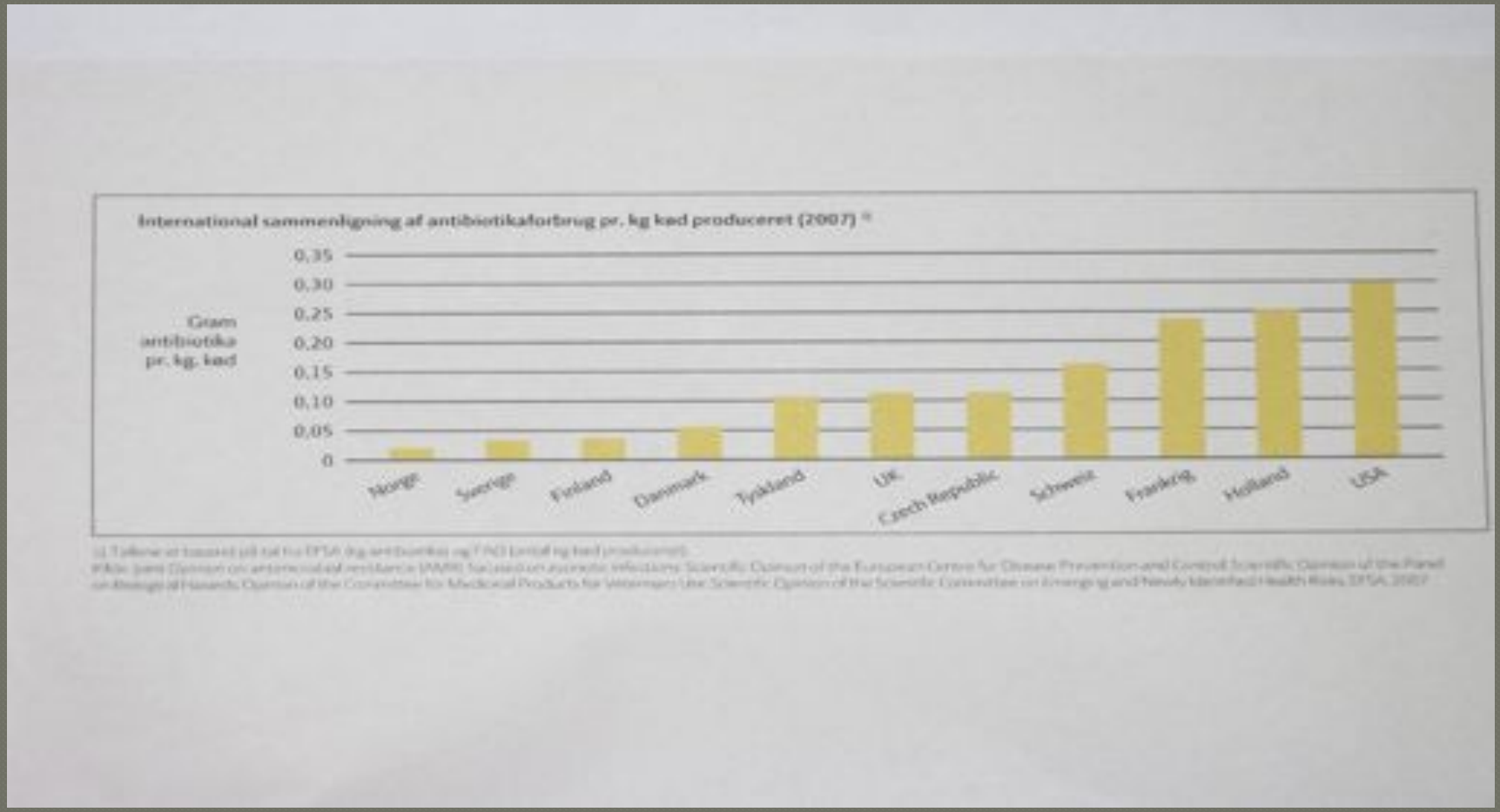
- Day 2 after change-over, diarrhoea virtually disappeared in the farrowing house and has not reappeared.
- Since switching, no dead bloated sows or death by ulcers, or stomach bleeding. (36 sows died due to stomach related sickness over the last two years before switching.)
- No sows have died through loss of appetite. (2 sows died the year before.)
- Previously, first layer sows, piglet diarrhoea problems were severe. No longer a problem!
- Two years ago when the diarrhoea was as its worst, we had months with nearly 30% dead in the farrowing house. At the time it was impossible to find sows that could nurse piglets.
- Piglets weaned per litter have risen by 1 to 2 piglets per sow. Over 12 piglets on average weaned and 14 piglets weaned per sow is now very common. Fewer nursing sows, simply due to the fact that the sows are milking better and eating more.
- Sows farrow better and we have 0.4 more liveborn per sow, of which 0.2 is gained from fewer stillborn. Now we have 15 liveborn and 1.6 stillborn, average over the past 16 months.
- The piglets weaned are stronger and more evenly sized.
- Man-hours are reduced by 20-30 hours per month, partly by washing less and partly because everything is much easier.
- Medicine use dropped dramatically, in both sows and piglets.

Weaned Piglets with some local school children.

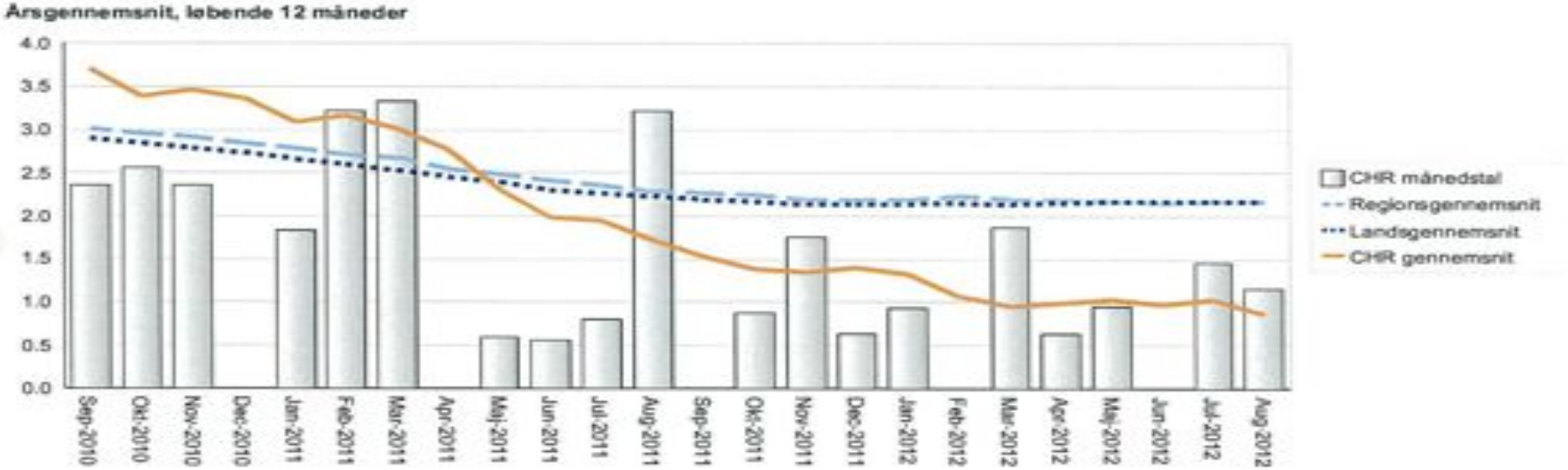
Changeover - Weaners

- Change-over started with 7-15 Kg from 01-01-12. The rest of the weaners followed on 01-05-12.
- From day 2, the pigs were more active and their dung was more solid.
- Diarrhoea almost disappeared, even with changes in food to diets containing soya.
- Stopped using the antibiotic (Danaguard) – No need.
- Aerosoup usage reduced to 1/3. Now only used in individual pens.

Denmark is known for low antibiotic usage in pig production
5 times less than USA!
And half of other pig exporting countries



Medicine Use: Sows and piglets Non-GMO from April 2011

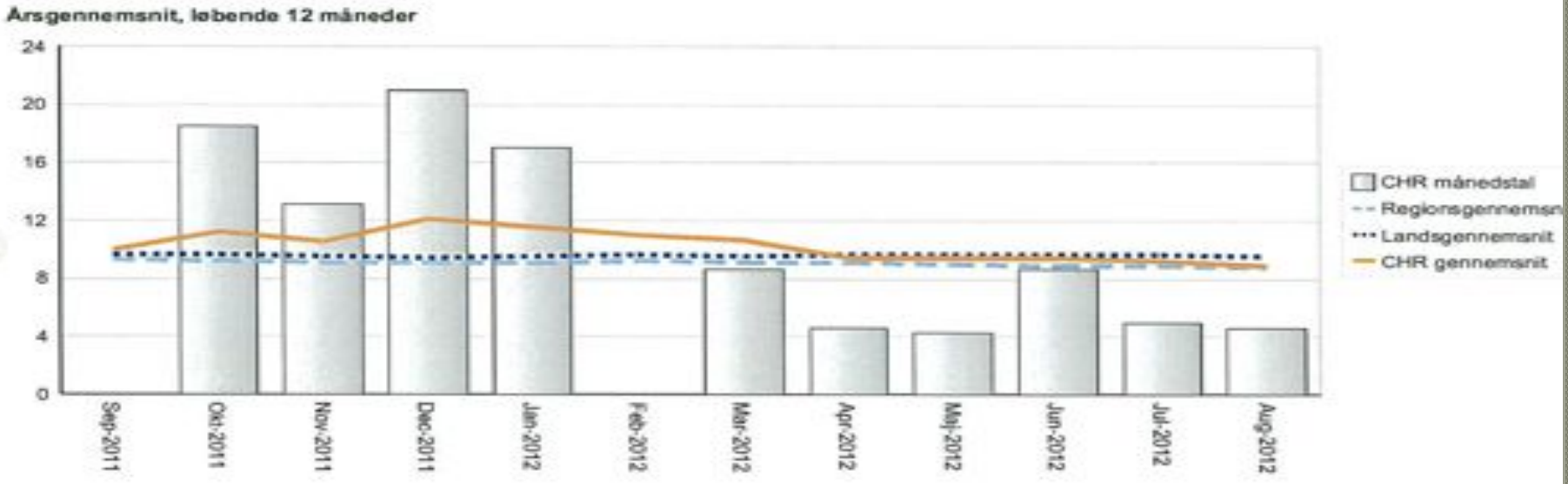


ADD pr. 100 dyr pr. dag pr. antibiotikagruppe

Antibiotikagruppe	Sep 2011	Okt 2011	Nov 2011	Dec 2011	Jan 2012	Feb 2012	Mar 2012	Apr 2012	Maj 2012	Jun 2012	Jul 2012	Aug 2012
Tetracycliner		0,09	0,46	0,27			0,36	0,37	0,45			0,36
Penicilliner, udv.			0,56									
Simple penicilliner				0,22	0,72		0,86		0,43		0,36	0,43
Sulf/trim		0,43	0,36	0,16	0,21		0,64	0,11			1,1	0,37
Streptomycinpræparater		0,36	0,37					0,15	0,07			
Ordinationsgruppe	**Sep 2011**	**Okt 2011**	**Nov 2011**	**Dec 2011**	**Jan 2012**	**Feb 2012**	**Mar 2012**	**Apr 2012**	**Maj 2012**	**Jun 2012**	**Jul 2012**	**Aug 2012**
Reproduktion		0,27	0,14	0,22	0,29		0,97				1,03	
Tarmlidelser		0,16	0,22	0,16	0,21		0,11	0,11			0,43	0,37
Luftvejslidelser		0,09	0,46	0,27			0,36	0,37	0,45			0,36
Led, lemmer etc.		0,36	0,93		0,43		0,43	0,15	0,5			0,43
Gns. antal dyr/md.	*450*	*450*	*450*	*450*	*450*	*450*	*450*	*450*	*450*	*450*	*450*	*450*

Medicine use: Weaners

Non–GMO from 01-01-12



ADD pr. 100 dyr pr. dag pr. antibiotikagruppe

Antibiotikagruppe	Sep 2011	Okt 2011	Nov 2011	Dec 2011	Jan 2012	Feb 2012	Mar 2012	Apr 2012	Maj 2012	Jun 2012	Jul 2012	Aug 2012
Tetracycliner		4,1	4,23	4,1	4,1		4,1			4,23		
Pleuromutiliner		7,88		7,88	7,88							
Sulf/trim			0,47	0,76	0,76			0,32		0,16		0,46
Streptomycinpræparater		0,41			0,2		0,41		0,2		0,82	
Antibiotika ej syst		6,14	8,47	8,19	4,1		4,1	4,23	4,1	4,23	4,1	4,1
Ordinationsgruppe	**Sep 2011**	**Okt 2011**	**Nov 2011**	**Dec 2011**	**Jan 2012**	**Feb 2012**	**Mar 2012**	**Apr 2012**	**Maj 2012**	**Jun 2012**	**Jul 2012**	**Aug 2012**
Tarmlidelser		10,24	13,17	13,05	8,96		8,19	4,55	4,1	8,62	4,1	4,55
Luftvejslidelser		7,88		7,88	7,88							
Led, lemmer etc.		0,41			0,2		0,41		0,2		0,82	
Grs. antal dyr/md.	*2.100*	*2.100*	*2.100*	*2.100*	*2.100*	*2.100*	*2.100*	*2.100*	*2.100*	*2.100*	*2.100*	*2.100*

Changeover – Economy: Sows weaning at 7kg

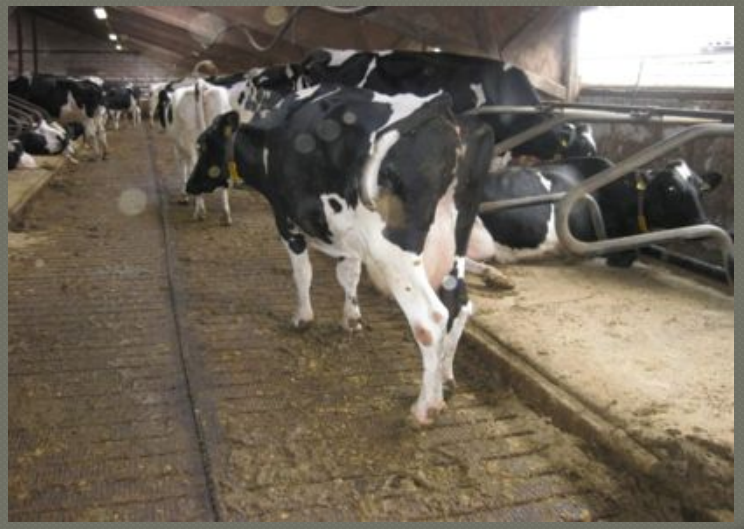
- 1.8 more piglets weaned per sow. (29.9 as opposed to 28.1 before)
- <u>Financial effects sows:</u>
- 1.8 more piglets weaned = **+225,000 Kr.**
- 12 sows less per year die due to stomach problems = **+24,000 Kr.**
- 2/3 of medicine saved in the sow herd = **+30.000 Kr.**
- Non-GMO soya contains more nutrition, protein and energy. The added value of protein and energy alone is 17kr. per 100 kg = **+12.750 kr.**
- Extra expenses NON-GMO soya for 75 Ton. 55 kr./hkg = **-41.250 Kr.**
- The extra costs in total = **63,34 Kr.** per sow.
- In my case the savings in medicine alone pays for the extra cost incurred by the NON-GMO soja.
- **In total, a plus of : 250,000 Kr. or 550 kr. per sow.**

Changeover 7-35 Kg pigs

Extra expenses NON-GMO soya	-31250	kr.
Saving in medicine costs	18000	kr.
Mortality rate declined by minimum 1 %	20000	Kr.
Profit so far	6750	Kr.

- Still early days to give sound figures on feed usage and daily gain,
- but it looks very promising indeed.
- Last 350 piglets sold – age <80 days, 36.5 kg – very good indeed!

Photos from Sigurd Christensens Farm



Major changes in Sigurd's herds

- Cows: After having had Cronic Botulism diagnosed Sigurd changed to Non-GMO soya for his cow herd. Together with other initiatives, it has dramatically enhanced the health and production of his cows.
- Sigurd is aware that Glyphosate kills beneficial stomach micro-organisms and leaves Clostridia to spread. He is also looking at probiotic micro-organisms to control Clostridia and ways of reducing Glyphosate in his feed.
- Sows and Weaners: With Sigurd's knowledge of GMO soya and Glyphosate does he no longer dare to feed his sows GMO soya. Therefore he has changed to Non-GMO soya. This has resulted in an equally dramatic change in pig health and production figures.
- One thing that Sigurd noticed was that sows, inseminated up to two weeks before changeover and onwards, had 1 to 2 pigs more liveborn. This information indicates that there has been problems with the eggs to attaching to the lining of the fallopian tube and thus toxicity, nutrient deficiency or stress could be the reason, as the eggs attach on week 3-4 after inseminating.

  Sigurd says that the first priority for him is keeping his cow herd alive. He has not yet calculated the financial gain but health and production in both herds is improved significantly.

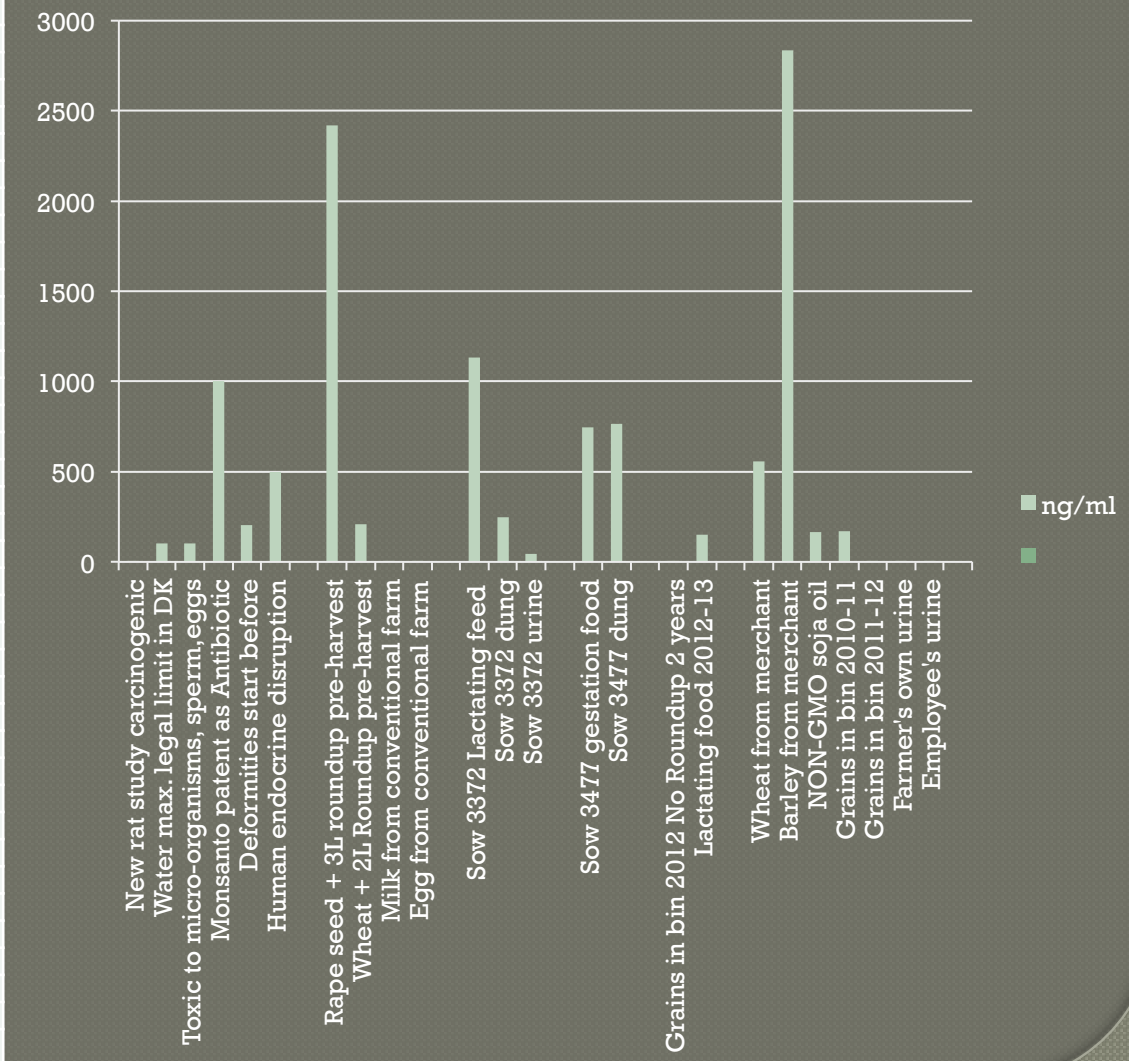
Conclusion

A change to NON-GMO,
Makes your herd easier to manage,
Improves the health of your herd,
Reduces medicine usage,
Increases production
and is
PROFITABLE.

Glyphosate in food, feed and feces and known toxicity levels

1000 Ng / ml = 1ppm = 1 Gram / ton	
	ng/ml
New rat study carcinogenic	0,10
Water max. legal limit in DK	100,00
Toxic to micro-organisms, sperm,eggs	100,00
Monsanto patent as Antibiotic	1.000,00
Deformities start before	203,00
Human endocrine disruption	500,00
Rape seed + 3L roundup pre-harvest	2.420,44
Wheat + 2L Roundup pre-harvest	209,46
Milk from conventional farm	1,18
Egg from conventional farm	6,71
Sow 3372 Lactating feed	1.132,55
Sow 3372 dung	246,30
Sow 3372 urine	44,82
Sow 3477 gestation food	746,94
Sow 3477 dung	763,57
Grains in bin 2012 No Roundup 2 years	3,46
Lactating food 2012-13	153,00
Wheat from merchant	554,50
Barley from merchant	2.835,87
NON-GMO soja oil	165,44
Grains in bin 2010-11	170,44
Grains in bin 2011-12	3,46
Farmer's own urine	2,58
Employee's urine	0,74

All samples contain Glyphosate
All my feed has glyphosate levels that are toxic to microorganisms and above or near the level at which birth defects have been detected.
My herd's birth defects are 1/800
Another farmer has 1/100 all his grains have been sprayed with roundup
1/100 is what was found in people in villages in Argentina



Direct Toxicity of Glyphosate

Rate (ppm)	System affected	Reference
0.5	Human cell endocrine disruption	Toxicology 262:184-196, 2009
0.5	Anti-androgenic	Gasner et al, 2009
1.0	Disrupts aromatase enzymes	Gasnier et al, 2009
1-10	Inhibits LDH, AST, ALF enzymes	Malatesta et al, 2005
1-10	Damages liver, mitochondria, nuclei	Malatesta et al, 2005
2.0	Anti-Oestrogenic	Gasnier et al, 2009
5.0	DNA damage	Toxicology 262:184-196, 2009
5.0	Human placental, umbilical, embryo	Chem.Res.Toxicol. J. 22:2009
10	Cytotoxic	Toxicology 262:184-196, 2009
10	Multiple cell damage	Seralini et al, 2009
10	Total cell death	Chem.Res.Toxicol. J. 22:2009
All	Systemic throughout body	Anden et al, 2009
1-10	Suppress mitochondrial respiration	Peixoto et al, 2005
	Parkinson's	El Demerdash et al, 2001
POEA, AMPA even more toxic		Seralini et al, 2009

Deformed Pigs date of birth and Type of deformity, Pilegaarden

No.	Date born	Cranial	Spinal	Legs	Sex organs	Heart failure
1	12-02-2011		Spinal / Rear legs			
2	15-07-2011	Missing Left Ear				
3	15-07-2011	Missing Right Ear				
4	07-10-2011	Cranium				
5	18-11-2011	Cranium				
6	19-12-2011		Spional rear legs			
7	25-12-2011		Spinal rear legs			
8	25-12-2011		Spinal all limbs (Christmas Day piglet)			
9	28-01-2012		Spinal rear legs			
10	04-02-2012		Spinal rear legs			
11	20-03-2012	Cranium, muskular curbed short legs				
12	05-04-2012				Penis mis-shapen and placed behind legs	
13	21-04-2012		Spinal rear legs			
14	03-05-2012	Cranium, bloted, hart failiure?				
15	03-05-2012					Weak / heart failure
16	16-05-2012		Spinal all lims			
17	16-05-2012			Small right frontleg in wrong possition		
18	29-06-2012			Frontlegs and sholder wrong possition		
19	15-08-2012		Spinal Rrear legs short and curled up			
20	06-09-2012	Cranial and front legs				
21	14-09-2012		Spinal rear legs			
22	14-09-2012		Spinal rear and front legs			
23	21-09-2012		Spinal Rear Legs			
		7	11	2	1	1

Deformities - Cranial

Deformities - Spinal

Deformity - Limbs / spinal
Nr. 16 - 17

Deformity – Siamese twin (body)

Unnatural plant life on the farm

Spreading Orach / Svinemælde *(Atriplex patula)*

Imported potplant soil contaminated with seeds produced a 3m high example with fifty side shoots with a myriad of seeds.

Is this plant Roundup resistant?

Changes in the Fields at Pilegaarden

- Rape seed - pods drop off where Roundup was sprayed before seeding. This did not occur in neighbouring fields that had been ploughed and not received Roundup.

- Smallgrain crops - 8 years reduced tillage with application of 1L/ha Roundup as a burn down prior to seeding led to more sickness in plants, Take-All being the main problem. Bad bushing and poorly developed crops, have led to all winter wheat being over sown with spring barley, for the last two years.
- The last year of reduced tillage winter wheat seeded after oilseed rape, seeded om the 10-09, had only 3 sick leaves at christmas, and looked like on the next picture, it should have been a healthy crop after oilseed Rape.

Changes in the Fields

(Photos provided by Don Huber)

Long-term Effect of Glyphosate

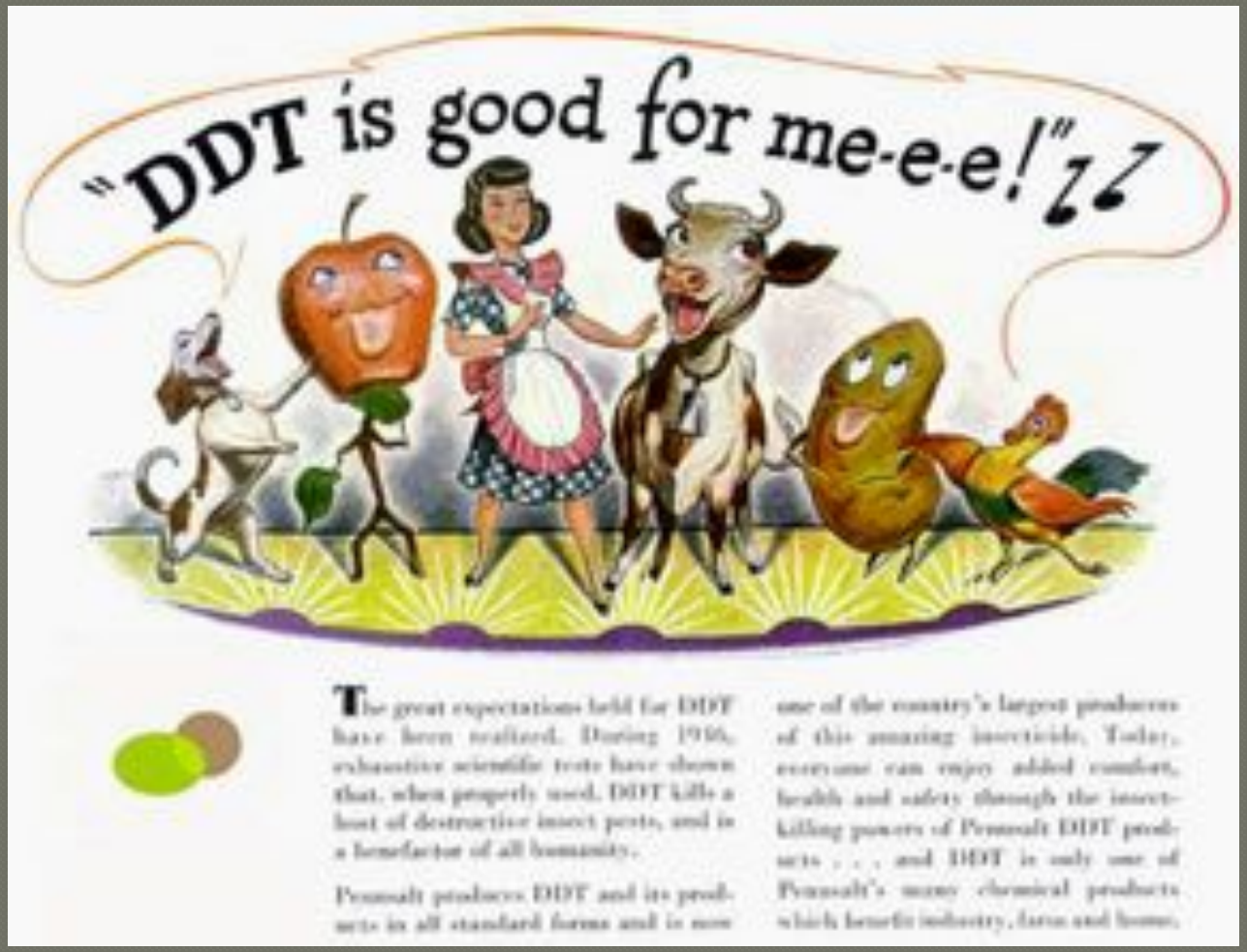
Field observations in winter wheat production systems in 2008 & 2009 point to potential negative side-effects of long-term glyphosate use.

after Roemheld et al., 2009

Summary

- My experiences can only be described as anecdotal, as I have harvested the crops and fed the pigs and merely observed the changes.
- These observations do, however, stem from facts and figures and makes one question present farming methods.
- I believe, we are seeing the beginning of a major collapse in animal, plant and human health.

This slide puts into perspective how we can be misled by new, intriguing breakthroughs and ignore the warning signs.



The same goes for GMO's and Roundup today!