




**ALTERNATIVES TO ZINC POST-WEANING**

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CPH Pig  
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**REPORT ON 'THE STATE OF THE UNION'  
IN TERMS OF ZINC AND COPPER ON FARM LAND**




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**THE REPORT CONCLUDES**

- **Significant increase** in soil concentrations of **copper** and **zinc** where manure is applied
- **Zero-effect** levels for zinc **exceeded** in soil in 45% of recordings – primarily in sandy soil
- In 28 years, **copper** has increased by **21-28%** and **zinc** by **2-5%** (**24% from 1998-2014**)
- The current level of use may be **problematic in the aquatic environment**


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**ANNUAL USE OF ZINC**

	Zinc (tonnes)	% share of total use
Total use	1,293	
Release	1,216	
Sows with piglets	195	15%
Weaned pigs, 7-31 kg	560	43%
- For medicinal purposes (VETSTAT)	(414)	(74%)
Finishers, 31-110 kg	538	42%

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**RELEASE/HA AT 1.4 AU/HA**

	Zinc (g/ha)
Weaned pigs, 7-31 kg	5,380
Finishers, 31-110 kg	1,314
Sows/year	1,111
Sows with 30 pigs up to 31 kg	2,739

- Plant uptake:
  - Zinc: approx. 200-300 g/ha


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**EU HANDLING OF MEDICINAL ZINC**

- **Two zinc products approved by the EU** as veterinary medicines in all EU member states (early 2016)
- **The Netherlands and France lodged a protest**
- **CVMP withdrew permission in October**
- **Many asked CVMP for a re-evaluation**
- **CVMP has decided to re-evaluate**
- **Medicinal zinc likely to be banned !!!**
- **But hopefully long transition period**

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## ROUTINES + MANAGEMENT WITHOUT MED. ZINC

- Maintain focus on the pigs every day
- No mixing of pigs
- All in - all out
- High levels of hygiene & thorough drying
- High weaning weight
- Use relevant vaccines
- Adjust & optimise feed

**Guidelines & Recommendations coming up**

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## FEEDING

- Strong weaned pigs – sow feeding
- Supply of feed in the farrowing pen
- Restricted feeding post-weaning
- Water quality
- Protein
- Calcium
- Ingredients
- Additives

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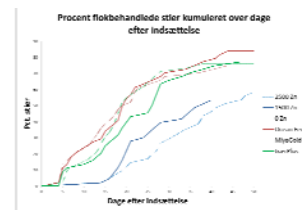
## CURRENT TRIAL

1. 2500 ppm zinc
2. 1500 ppm zinc
3. 0 zinc
4. Seaweed from Ocean Harvest in Ireland
5. 'MiyaGold' from Huvepharma
6. 'GærPlus' from Danish Agro

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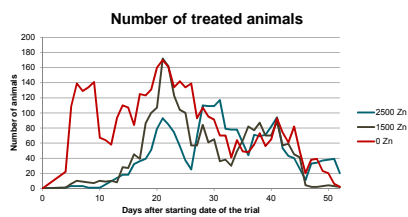
## PENS WITH GROUP-TREATMENT **HIGHLY PRELIMINARY DATA** (44 REPL. OUT OF 62)



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## NUMBER OF TREATED PIGS PR DAY



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## PRODUCTIVITY, **HIGHLY PRELIMINARY DATA** (44 REPL. OUT OF 62)

Group	2500 ppm Zn	1500 ppm Zn	0 ppm Zn	Sea-weed	Miay-Gold	GærPlus
Replicates	41	43	44	44	42	44
Start weight,kg	6,9	6,9	6,9	6,9	6,9	6,9
Daily gain 7-9kg, g/d	265	265	186	197	190	192
Daily gain 9-16kg, g/d	468	466	433	440	432	436
Daily gain 7-30kg, g/d	530	532	512	512	511	516

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**TRIAL QUESTIONS (UNIVERSITY OF COPENHAGEN):**  
(15 PIGLETS PER GROUP)

- Does the addition of zinc, seaweed, yeast and probiotic to feed for weaned pigs affect:
  - Weight and body proportions d11 post-weaning?
  - Development of individual parts of the digestive tract?
  - Existence and composition of microflora ?
  - Time of outbreak and intensity of diarrhoea and the need for antibiotic treatment, and is this correlated to:
    - Internal/external micro organisms (host-microflora interaction)?
    - Changes in small intestine (barrier function)?
    - Haematological parameters in blood (response)?

**NEW TRIALS – RESULTS UNDERWAY**

Focus on the period around weaning:

- Test of **probiotics** in 3 herds with Chr. Hansen
- Test of **salicylic acid** in 1 herd
- Development and testing of **antibodies from pig plasma** (DTU)
- Test of commercial concepts (combination of multiple measures)

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**Questions ?**

