



Crowne Plaza Northwood, Dublin

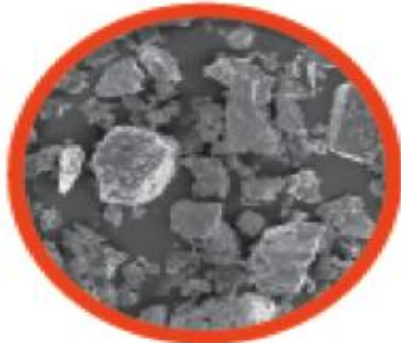
25th - 27th May 2016



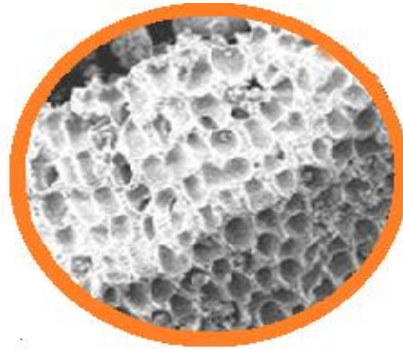
**Macro minerals,
More than just rock??
Dr Stephen J Taylor
Celtic Sea Minerals Ltd**



THE CALCIUM COMPARISON:
Microscopic Views of a Rock and a Plant



Limestone calcium
magnified 3000x



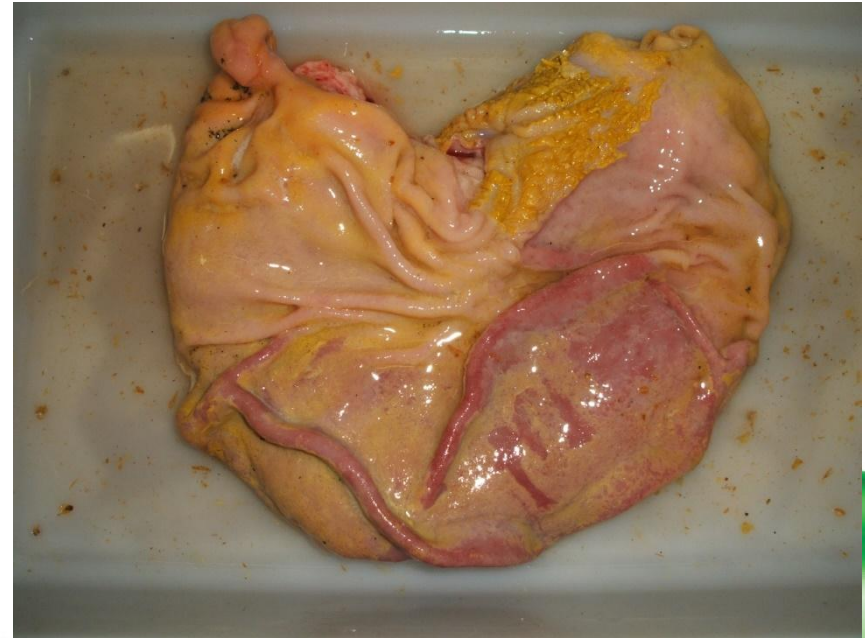
Red Marine Algae
Calcium Lithothamnion

Plant-sourced and porous, our Calcium is part of an intricate matrix of minerals that are organized in a natural honeycomb structure. For mineral nourishment it delivers Calcium, Magnesium and multiple other trace minerals

Gastric Ulcers



- Par-oesophageal region of the stomach
- Affects growing pigs and sows
- Increased by “fluid” nature of gastric content
- Increasing problem –
 - Denmark ; Financial consequences – reduced growth & FCR, frequent vomiting, sudden deaths, pale body, dark faeces, most probably suffering severe pain. (CPH Post on line)

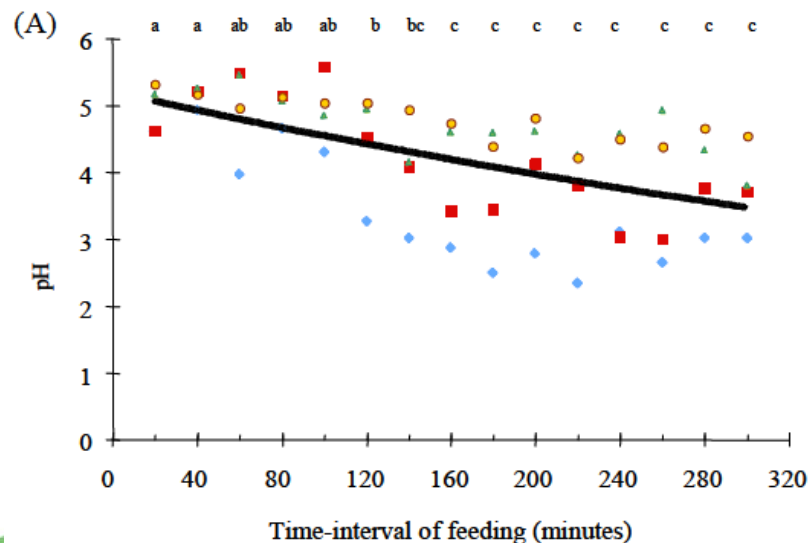


Macro Minerals



- Cation released by reaction with gastric acids
- Range of effective pH
 - Limestone; < 3.5
 - Lithothamnium; < 6
 - Magnesium oxide; varying reactivity due to calcining temperatures

Impact of meal size (200g-1.2kg) on pH in fundus region of 45kg pig.
(Chiang et al 2008)

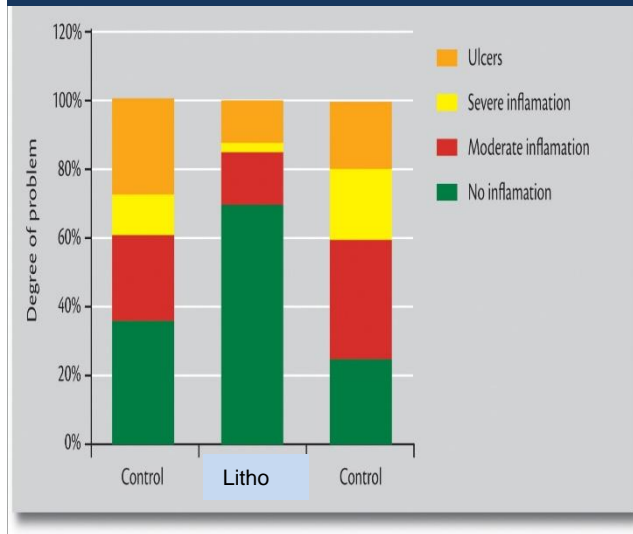


Improving Gastric Health



- Reducing Ulcers
- Reducing Haemorrhagic Bowl syndrome
- Maintaining tight junctions (Ma et al 2000)

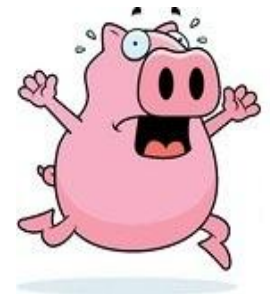
Effect of Lithothamnion on inflammation and ulceration of the stomach wall



Aggression



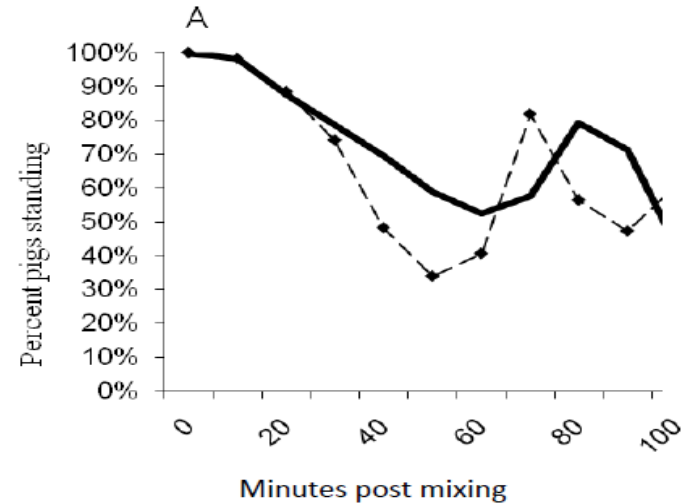
- Competition for Resources
- Establishing a hierarchy
- Submission = lower productivity
- Lower body fat = increased aggression



Reduced Aggression

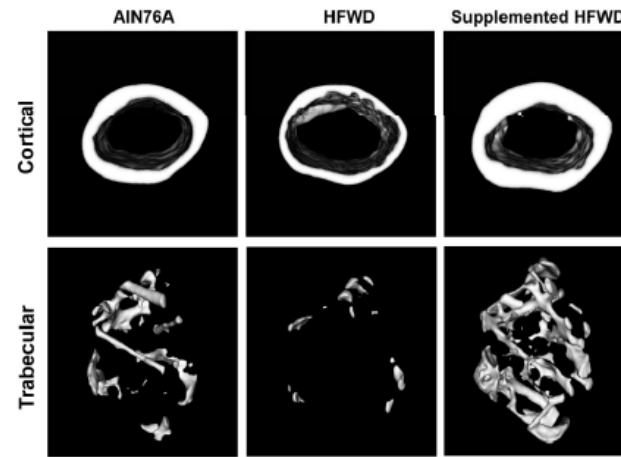


- **Teagasc – Ireland O’Driscoll et al., 2013**
- Reduced salivary cortisol
 - At mixing
 - At feedout
 - Basal level
 - Lay down faster



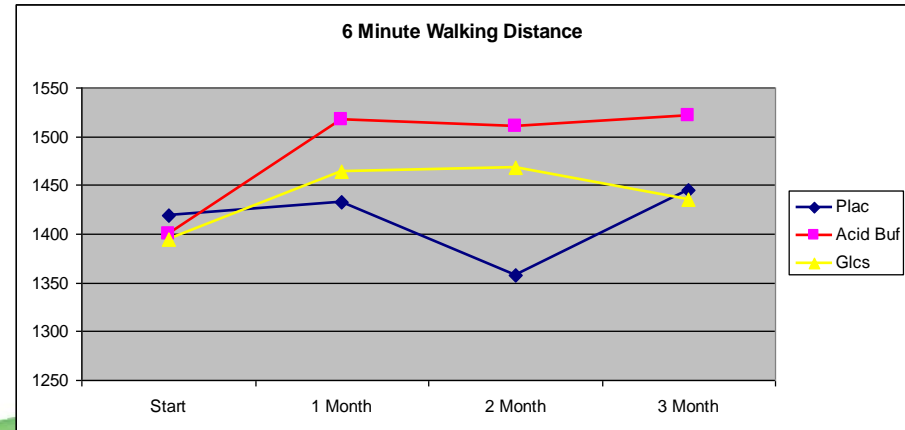
Skeletal Integrity

- Longevity
- Welfare
- Genetic disposition



Aslan et al 2010

Frestedt et al 2008



Sow Productivity



- Hyper prolific sows
- Number of piglets weaned has increased significantly
- Piglet weaning weights have decreased significantly
- Sow parity profile has decreased

Table 1. Components of the number of pigs/sow /year for a number of countries.

	Denmark	France	Germany	Netherlands	Ireland
Born Alive/Litter	15.6	13.5	13.81	14.2	12.7
Pre-weaning Mortality %	13.6	13.8	14.62	13.3	11.2
Weaned/Litter	13.48	11.64	11.79	12.31	11.28
Litters/Sow /Yr	2.26	2.35	2.32	2.37	2.36
Weaned/Sow/Yr	30.46	27.35	27.35	29.17	26.62
Weaner Mortality	2.9	2.4	2.2	2.5	2.6
Finisher Mortality	3.7	3.6	2.5	2.3	2.4
Pigs Produced/Sow/Yr	28.45	25.71	26.07	27.77	25.34

(Interpig 2015, Brazil, c/o Teagasc 2015)

Sow Productivity



Commercial farm
trials; Sep15

Ireland.
Bangkok;

	Control	Control	Lithotham	Control	Lithotham
No of farrowings	>500			32	
No.Born Alive per Litter	12.99	13.72	13.68	11.6	11.2
Pre Weaning Mortality	8.92%	12.90%	10.67%	8%	4.50%
Mortality to 5d				4.5%	2.20%
Net Produced / Litter Indicator	11.83	11.95	12.22	10.63	10.72
Piglet Weight @ Weaning	8.54	7.68	8.39	6.53	6.81
Sow feed consumed					7%



Lithothamnion, maybe a functional alternative to rock ?



