

Vitamin D enhancement in pork

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Grow through research

Vitamin D Deficiency



of the EU population are vitamin D deficient (deficiency <50nmol/L)

Odin Project estimates of vitamin D deficiency in Europe by using standardized serum 25(OH)D data





Cashman et. al. 2016 DSM Vitamin D Infographic - http://public.brighttalk.com/resource/core/93947/vit-d-infographic_142389.pdf

Vitamin D - Headline News



Vitamin D pills - what's the truth? () 5 October 2018 f 📀 🄰 🖾



CAN YOU GET A SUNTAN AND ABSORB VITAMIN D THROUGH A WINDOW?

The sun emits three types of ultraviolet rays - but ordinary glass only blocks one



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Kashmira Gander | @kashmiragander Thursday 25 February 2016 17:54

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at's the reality?

Gloomy winters could be killing us warn experts who say pritons are not getting enough Vitations are not getting at rist

om sunlight putting us

ving daily intake of vitamin D is set

as of 10 micrograms of the vitamin

hen it is exposed to sunlight nd weakening of the bones

one be taking



Facebook



What's the problem.....?

Not enough sunshine

- Above 40–45°N, generating vitamin D from solar radiation is impossible for 4–5 months of the year
- Skin cancer fear

Not enough dietary sources

- Those available are not widely consumed
- Oily fish salmon, sardines and mackerel
- eggs







Study - investigating use of supplemental UV-B light and 2 dietary additives



• Sampling –back, loin, and leg

Analysis

• Vitamin D3, Vitamin D2, 25-OH-D3 and 25-OH-D2







Results - Pork Back raw and cooked

Significance

UV-B vs No UV-B P=0.002 Raw vs Cooked P<0.001



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Vitamin D3 concentration increased

~15% on cooking (loss of moisture) ~12% with UV-B

Results - Pork Back raw and cooked

Vitamin D2 concentration ~2% that of D3



No D2 increase with UV-B (P=0.552) – Plant source



Results - Loin and Leg

Loin Sig. UV-B vs No UV-B

Vitamin D3 P=0.013 25-OH vitamin D3 P=0.059



Leg

Sig. UV-B vs No UV-B

Vitamin D3 NS 25-OH vitamin D3 P=0.038





What Next?

- Initial results demonstrated increasing vitamin
 D3 by application of UV lighting is feasible
- Pigs received low UV-B exposure potential for higher dose with low risk of erythema
- Role for UV-B for confined animals
- Successfully doubled the vitamin D3 content of milk
- Potential for animal health benefits
- Applicable to other meats beef or chicken

