

Editorial

SPACE 2019: Nor-Feed Takes The Floor!

Meet us during the major French exhibition, **Hall 9, Booth 27 and through 3 conferences.**

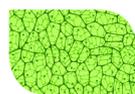
▶ « *Norponin[®]XO: as efficient as synthetic coccidiostats* », **Dr. Amine Benarbia**, R & D Manager, Nor-Feed (friday 13 September, 2.00 PM in the SPACE Administrative Area).

Nor-Feed will also talk about **aquaculture** during a dedicated conference (Tuesday 10 September, From 2.00 to 6.00 PM in the H meeting room of the Administrative Area):

▶ « *Plant extract standardization for aquaculture feeds* », **Guillaume Le Reste**, Halieutica

▶ « *Bien connaître les plantes pour en extraire le meilleur : exemple de la gestion de l'ammoniaque en aquaculture* », **Pierre Caillis**, Nor-Feed.

We welcome **Viktoria Rameau** who takes charge of Nor-Feed development in the Russian-speaking countries.



Focus on...

Minerals, flavonoids, fibers... everything is good in Citrus!

A Scientific Review carried out in 2009 by *González-Molina et al.* describes the characteristics and benefits of Citrus on human health and nutrition.

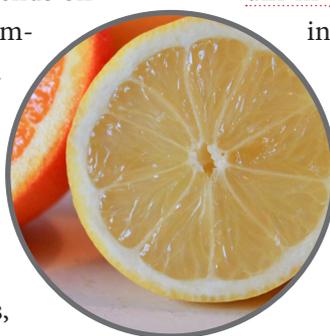
The article deals with the richness of this fruit in phenolic compounds, minerals, essential oils, carotenoids and other nutrients. Citrus is therefore an essential asset to prevent certain pathologies (obesity, diabetes, cardiovascular diseases and several cancers). Even if their content depends on the crop and the fruit maturity, the Citrus compounds are precious allies for nutrition and health.

Compounds with many properties:

▶ **Vitamin C**, highly bioavailable in the Citrus, plays a key-role by desactivating free radicals. Vitamin C contributes to prevent the damages caused by the oxidation on proteins, lipids and DNA.

▶ **Potassium** is the most present mineral in the citrus. It contributes to the good operation of nerves by maintaining the water balance of the organism and thanks to its role in the nervous impulse of the muscles. Other minerals are found at lower levels (calcium, magnesium, phosphorus).

▶ **Citrus** is also a source of **fibers** with positive effects on the intestinal motility and which play a role to prevent digestive diseases.



Some properties of the Citrus are also of interest for the agroindustry:

Pectins are for example very used as gelling agent to densify certain products. Also, dietary fibers are very appreciated for their emulsive properties.

▶ **Last but not least, citroflavonoids** (eriocitrin and hesperidin in particular) are antioxidant compounds present in citrus. They contribute to prevent the damages related to oxidant stress and also play a role to fight against certain cancers.

These molecules have also a role to play in animal nutrition : hesperidin has a positive influence on microbiota by stimulating the growth of positive bacteria (*Lactobacillus acidophilus*, etc.) and by inhibiting *Clostridium perfringens*, which is responsible for several pathologies in farm production. As for eriocitrin, it favors energy production by mitochondria and has a positive impact on fatty liver.

Main source: *Natural bioactive compounds of Citrus limon for food and health; E. González-Molina et al. Journal of Pharmaceutical and Biomedical Analysis 51 (2010) 327-345.*

Field evidence

A supplementation in citrus extracts (Nor-Spice AB®) improves sows performances during peripartum

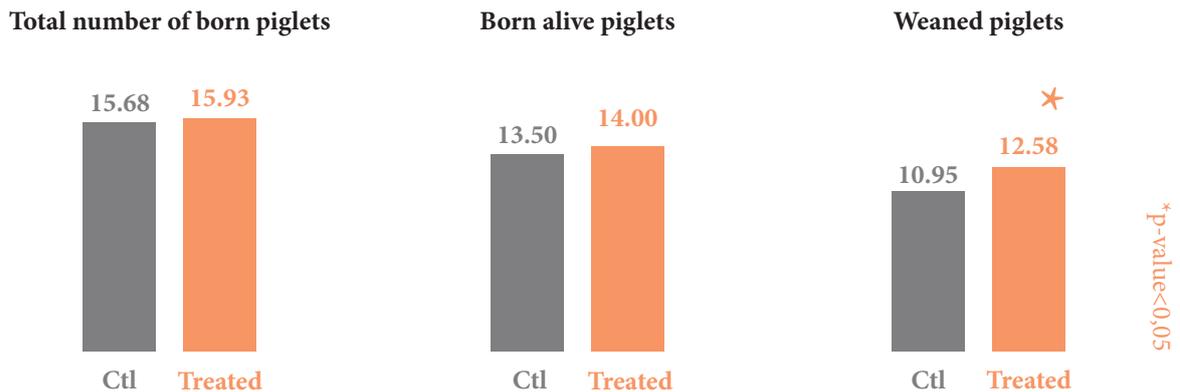


Material & Methods

Trial conducted in Thailand with 80 sows in a commercial farm of the Saraburi District.

- ✓ **Control Group:** standard diet
- ✓ **Treated Group:** standard diet + **Nor-Spice AB®** (12,5 g/sow/day or 2 500 ppm per T of feed)
- 🕒 **Duration :** from 15 days before farrowing until 5 days after.

Results:



Nor-Feed at the Poultry Science Association Meeting (Montreal)



The annual meeting of the **Poultry Science Association** (Montreal, 15 - 18 July 2019), has seen the active participation of Nor-Feed through 3 posters.



► **Anne Burel** proved that Nor-Mite®, in feed repellent against red mites, is also efficient to reduce the populations of flies in farm.

Evaluation of the repellent effect of a characterized natural product on flies



► **Sekhou Cissé** evaluated Nor-Spice AB® positive effects on broilers.

Standardized natural citrus extract effect on blood biochemical parameters and zootechnical performances of broilers chickens



► **Paul Engler** presented the positive effects of a supplementation in Nor-Grape®80 during vaccination on broilers.

Effect on the vaccination success of a dietary supplementation with a dry grape extract in broilers in conditions of thermic discomfort

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