

# ASIAN POULTRY

MAGAZINE

## Saying YES to customers changed Zorabian's fortunes



**IS THE DATE PACKAGING MENTIONED ??**

Chicken meat has a shelf life of 3-4 days if stored at a temperature of 0-4 °C without any temperature abuse.

Please check manufacturing date ALWAYS and do not buy the product if the date of packaging date is not mentioned.



Perizaad Zorabian



Meyer Food's team: seated from left, Athalia Pemasari and Renny Lim.

## Meyer Food widens reach through social empowerment



## Phylogenics' effect on quality of poultry products



○ Is early feeding favorable?

○ Precision animal health management through drinking water

○ Customizing avian influenza vaccination programs to disease outbreaks

○ A new approach to controlling Gumboro disease



*Phytogenics are an effective natural solution with high acceptance by consumers for their safety and compliance with environmental sustainability (all the pictures are courtesy of Delacon).*

## Phytogenics' effect on quality of poultry products

Certain phytogenics can play an essential role on the desired carcass and egg characteristics, writes Delacon.

**W**ith the world population projected to reach 9.8 billion by 2050, animal agriculture is under immense pressure to increase production to meet demand for high quality animal protein. This pressure is one of the most significant challenges facing the poultry industry today.

Growing demand for animal protein has led to great broiler and layer industry changes, mainly focusing on improving feed efficiency and meat and egg production.

Because of rising concerns and consumer preference for products raised without antibiotics and inorganic compounds, alternatives must be found. New strategies and commercial products, such as

probiotics, prebiotics, organic acids and phytochemical compounds were developed over the last few years.

The beneficial effects of phytogenics on animal health and productivity can vary widely in their use and function because of differences in plant origin, extraction methods, formulation, and interaction with other dietary components. That is why certain phytogenics can play an essential role in the desired carcass and egg characteristics.

According to the literature, phytogenics can improve the characteristics of animal products. Of particular importance is the improved oxidative stability of the carcass, the meat and fat, and the egg yolk, caused by several antioxidative compounds in essential oils or the individual plants. ▷



*PhytoGENICS can improve broiler meat's oxidative stability, due to the antioxidant effects of its essential oils.*

◁ PhytoGENICS can also improve carcass weight and breast meat yield. In eggs, phytoGENICS can improve the Haugh unit and the composition of the egg.

#### Carcass characteristics

Breast meat yield has become a deciding factor for economic profitability in the poultry meat industry. PhytoGENICS can be a crucial tool supporting the progress made to improve this parameter over the past decades.

To prove this statement, phytoGENICS were supplemented in broiler diets to improve carcass characteristics (Table 1). Carcass weight was improved by 5.8%, while breast meat yield improved by 0.4%.

#### Improved oxidative stability and tastet

PhytoGENICS can improve broiler meat's oxidative stability, which is ascribed to the antioxidant effects of its essential oils. Lipid oxidation in meat affects nutritional and sensory values, resulting in compromised meat quality and shelf life. Also, the positive effects of phytoGENICS on the sensorial properties of the flesh are proven.



*PhytoGENIC feed additives have a profound impact on meat quality.*

**Table 1. The effect of phytoGENICS on carcass characteristics (4 replicates, 25 birds each group)**

	Control	PhytoGENICS
Carcass weight (g)	1656 <sup>b</sup>	1752 <sup>a</sup>
Breast meat yield (%)	23.8	24.2

<sup>a, b</sup>: Means with different superscripts differ significantly (P < 0.05)

**Table 2. The MDA concentration of broiler breast muscle and thigh muscle**

Storage time	Control	PhytoGENICS
Breast muscle		
Day 1	0.108	0.099
Day 3	0.124	0.112
Day 5	0.141	0.126
Day 7	0.157 <sup>a</sup>	0.124 <sup>b</sup>
Thigh muscle		
Day 1	0.129	0.118
Day 3	0.143	0.126
Day 5	0.163 <sup>a</sup>	0.131 <sup>b</sup>
Day 7	0.179 <sup>a</sup>	0.137 <sup>b</sup>

<sup>a, b</sup>: Means with different superscripts differ significantly (P < 0.05)

The oxidative stability of meat is always evaluated based on the concentration of malondialdehyde (MDA, mg/kg meat) as the final product of fatty acid oxidation. The MDA concentration of meat increases with storage time, indicating the oxidation of fatty acids during meat storage. PhytoGENICS can decrease this oxidation process in both breast and thigh meat.

Differences between a control group and a group that received phytoGENICS reached significance

at the end of the storage period, indicating stabilization of the fatty acids in broiler meat by phytoGENICS, as can be seen from the ratio of MDA concentration in the meat of broilers fed phytoGENICS versus the control (Table 2).

Subsequently, a part of the breast and thigh muscles were separately evaluated by a trained sensory panel of six members, based on a score of 1 to 5 (1 = worst, 5 = best) for aroma, juiciness, taste and tenderness. ▷

Dietary phytogetic supplementation improved juiciness and tenderness of breast meat significantly, whereas juiciness of thigh muscle was non-significantly improved. No effect on thigh muscle tenderness was shown, probably related to the more fibrous nature of leg muscles. The total sensory score favored the phytoGENICS supplemented group (Table 3).

Lipid oxidation in meat causes a loss of its nutritional and sensory values, compromises sensory properties (meat quality), and reduces its shelf life. From this experiment, it was concluded that phytoGENICS improve broiler meat's shelf life and its sensory properties.

### Improved egg quality

In addition to antioxidative capacity, also protein quality of eggs can be improved by phytogetic feed additives. This can be measured using Haugh units, which indicate the egg protein's quality inside the shell, resulting from the relationship between the albumen height and the egg weight (albumen quality).

PhytoGENICS have been shown to increase the albumen quality and thereby the Haugh unit of eggs. Also, the egg content can be improved by phytoGENICS. From research, phytoGENICS have been shown to increase the protein and fat content of eggs (Table 4).

### Conclusion

Today, there is growing demand for high quality, tasty and safe meat products. However, improved genetics for higher growth rate percentage has led to a deterioration of meat quality.

Certain nutrients and feed additives have shown a profound impact on meat quality. Specifically, natural origins such as essential oils and plant extracts have attracted attention for poultry nutrition.

Phytogetic feed additives showed positive effects on carcass weight, breast meat yield, reduced fat oxidation, taste and juiciness, and egg composition, resulting in improved performance and animal product quality.

PhytoGENICS are an effective natural solution with high acceptance by consumers for their safety and compliance with environmental sustainability.



Improvement of protein quality of eggs with phytoGENICS.

Table 3. The effect of phytoGENICS fed to broilers on the sensory properties of meat

Storage time	Control	PhytoGENICS
Breast muscle		
Smell	4.20	4.10
Taste	4.06	4.10
Juiciness	3.76 <sup>b</sup>	4.26 <sup>a</sup>
Tenderness	3.83 <sup>b</sup>	4.36 <sup>a</sup>
Thigh muscle		
Smell	4.40	4.13
Taste	4.10	4.20
Juiciness	3.93	4.23
Tenderness	4.13	4.13

<sup>a,b</sup> Means with different superscripts differ significantly (P < 0.05)

Table 4. Protein and fat content in eggs (six replicates, six eggs per treatment)

	Control	PhytoGENICS
Crude protein (g/kg)	537.42 <sup>b</sup>	553.28 <sup>a</sup>
Total amino acids (g/kg)	474.4	496.6
Fat (g/kg)	320.58	326.09

<sup>a,b</sup> Means with different superscripts differ significantly (P < 0.05)

Delacon, as a leading phytogetic feed additives company in the market, can offer valuable solutions and give support to achieve growth, quality, and profitability while being sustainable. [Ap](#)

All references available upon request to Delacon.