TECHNICAL BULLETIN

Flavofeed®

Prebiotic for Broilers

About Flavofeed®

The additive Flavofeed® is a product composed of an association of Citric Bioflavonoids, Mannanoligosaccharids and Beta-Glucans, Linoleic and Linolenic Acids and the Ascobirc and Citric Acids, which states to the product a high antioxidant, immunostimulant and acidificant value, providing an improvement in the nutrient absorption and an enhance of the live weight gain.

The antioxidant power of Flavofeed® is the result of the action of Citric Bioflavonoids and Vitamin C, that together create a stable and bioavailable complex.

Together Mannanoligosaccharids and Beta-Glucans act in two different ways: pathogen adsorption, preventing the bacteria adhesion (*E. coli*, salmonella and clostridium) into the intestinal villosity; and immunomodulation, stimulating in a unspecific manner the immunologic system, increasing, on this way, the protection of the intestinal mucous and the whole organism, as well as its raises the response to the vaccines.

The Linoleic and Linolenic Acids confer higher presence of polyunsaturated and monounsaturated fatty acids on the organism, with its incorporation to the animal tissue, improving the lipidic stability and conferring higher nutritional value to the animal product.

The Organic acids, Ascorbic and Citric, work activating digestive enzymes, facilitating the food digestion, improving higher absorption of nutrients, and reducing the pH of the gastrointestinal tract, and so inhibiting the proliferation of pathogenic organisms and, at the same time, favoring the benefic flora.

Advantages of Flavofeed®:

Antioxidant Action of Bioflavonoids and Vitamin C:
- Mucous protector, increasing the absorption of the feed and improving live weight gain;
- Protect vitamin A e E.

Mode of Action Mannanoligosaccharids and Beta-Glucans:
- Immunomodulators: Increment of the intestinal mucous defense and of the organism;
- Increase of the vaccine response;
- Adsorption of pathogens.

Mode of Action of Linoleic and Linolenic Acids:
- Higher presence of polyunsaturated and monounsaturated fatty on the tissues;
- Better lipidic stability.

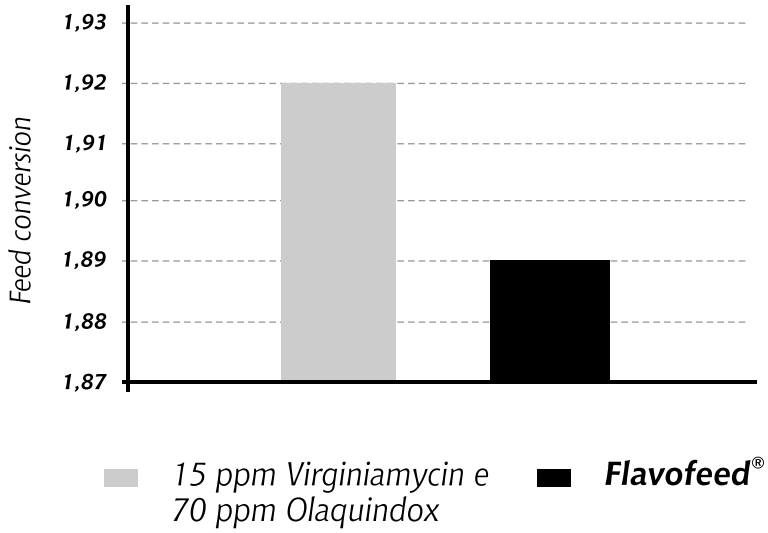
Mode of Action of Organic Acids, Ascorbic and Citric:
- Activation of the digestive enzymes, improve the feed digestion and consequently a better absorption of the nutrients.
- Inhibition of pathogenic microorganisms and, at the same time, favors the benefic flora.

Other Advantages of Flavofeed®:
- Better feed conversion rate;
- Maintenance of the productivity during the stress periods;
- Better meat quality;
- Higher yield for the producer.

Technical Studies Prove the Mode of Action of Flavofeed® in Broilers

In a research trial realized in a partnership between Quinabra® and the CPNA (Nutron) has been evaluated the performance of Flavofeed® in Cobb broilers on the absorption of nutrients offered in a commercial diet. It can be observed that the feed conversion rate for Flavofeed® was inferior in comparison to the treatment with antibiotics as growth promoters (Figure 1), which represents an important reduction in the feed consume, feed costs and consequently a better yield of the production system.

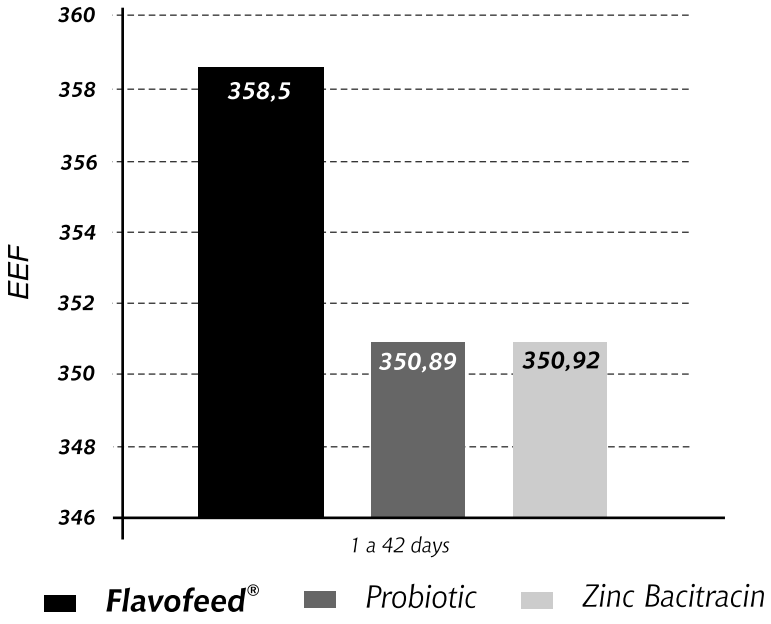
Figura 1 - Feed Conversion Rate within groups of animals treated with and without Flavofeed



*Obs: **Flavofeed®**: 300 ppm from the 1º day to the 21° and 200 ppm from the 21° day to the 42° day / Virginiamycin: 15 ppm during all the 42° days / Olaquindox: 70 ppm during all the 42° days.*

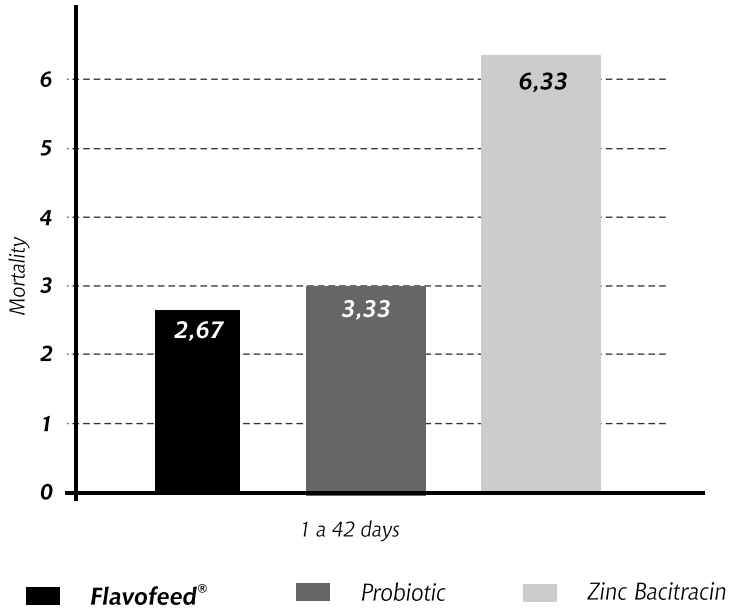
In another trial realized in the department of poultry science at the University UNESP/Botucatu, it was observed an increase on the EEF and a decrease in the mortality rate of the group treated with Flavofeed® in comparison with those treated with probiotics and zinc bacitracin (Figure 2 e 3). The lower mortality rate observed in the group treated with Flavofeed® was a consequence of a higher physiological capability of the animals against the challenges.

Figura 2 - EEF within groups of animals treated with Flavofeed, probiotic and zinc bacitracin



*Obs: **Flavofeed®**: 300 ppm from the 1º day to the 21° and 200 ppm from the 21° day to the 42° day / Probiotic: 150 ppm during all the 42° days / Zinc Bacitracin: 330 ppm from the 1º day until the 35° day.*

Figura 3 - Mortality Rate within groups of animals treated with Flavofeed, Probiotic and Zinc Bacitracin

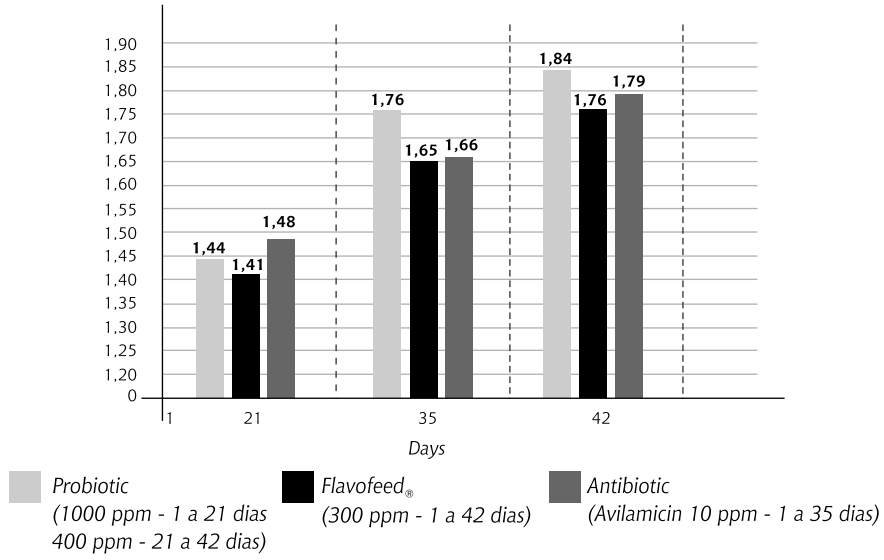


*Obs: **Flavofeed**®: 300 ppm from the 1º day to the 21° and 200 ppm from the 21° day to the 42° day / Probiotic: 150 ppm during all the 42° days. / Zinc Bacitracin: 330 ppm from the 1º day until the 35° day*

In a third trial also realized in the department of poultry science at the University UNESP/Botucatu, it could be observed that Flavofeed® when compared with the treatments with antibiotics (Avilamicin) and probiotics (bacilus) was superior in the following production items: Feed Conversion Rate, Mortality Rate, Weight Gain and consequently EEF. In function of those facts we can infer that Flavofeed® has a great potential for broiler production meanly because of the its physiological activity that brings a better development of the animal with less consumption of ration and the diminish of mortality during stress periods. Consequently the producer will have a lower cost of his production with a higher yield of his system.

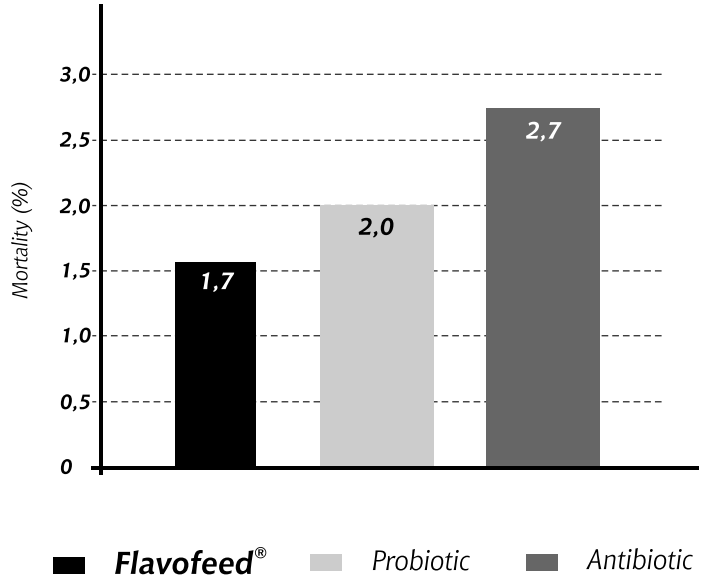
After the ending of the production trial was realized the TBA (thiobarbituric acid) test with the broiler chest to analyze the lipid oxidation of the carcass. The results of this test can be observed in the figure 8. In both analysis, chill and frozen chest, Flavofeed® had a superior result, showing that Flavofeed® can also bring good results in meat quality and therefore a great shelf life of the broiler meat pieces.

Figura 4 - Feed Conversion Rate within groups of animals treated with Flavofeed, Probiotic and Avilamicin



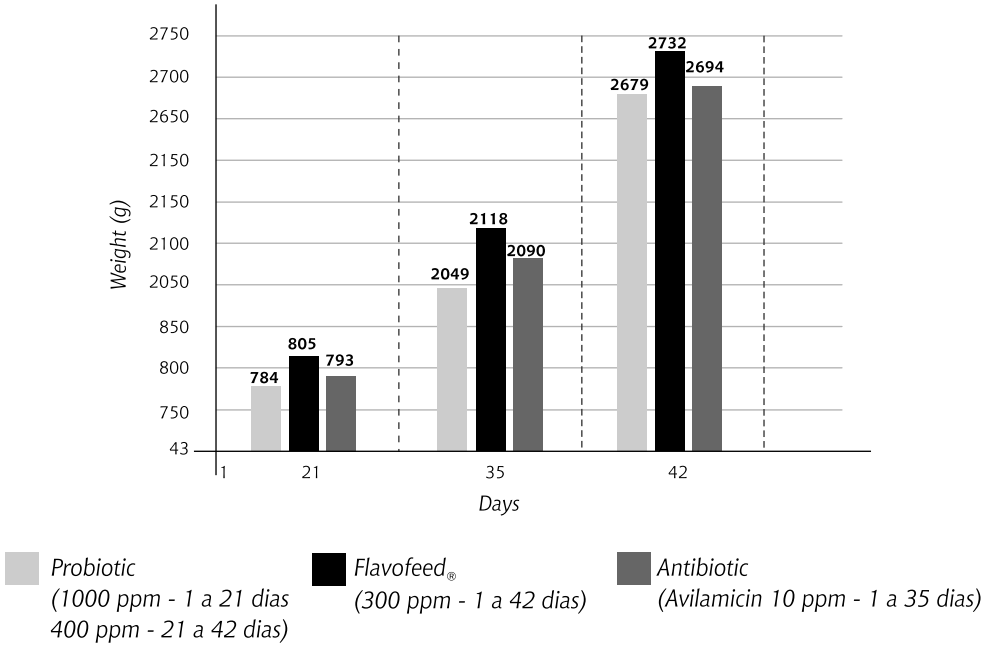
*Obs: **Flavofeed**®: 300 ppm from the 1º day to the 42° day / Probiotic: 400 ppm from the 1º day to the 21° and 1000 ppm from the 21° day to the 42° day / Avilamicin: 10 ppm from the 1º day until the 35° day.*

Figura 5 - Mortality Rate within groups of animals treated with Flavofeed, Probiotic and Avilamicin



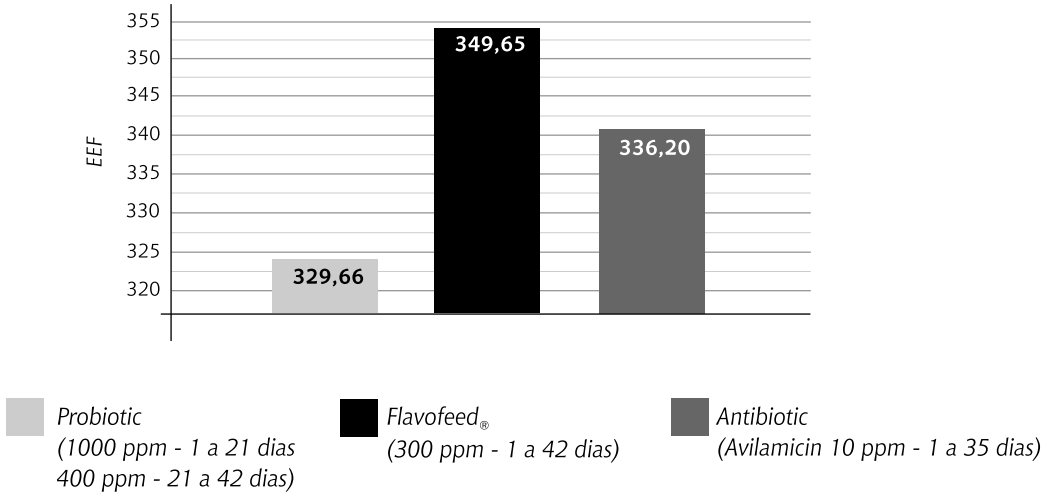
*Obs: **Flavofeed**®: 300 ppm from the 1º day to the 42° day / Probiotic: 400 ppm from the 1º day to the 21° and 1000 ppm from the 21° day to the 42° day. Avilamicin: 10 ppm from the 1º day until the 35° day.*

Figura 6 - Weight Gain within groups of animals treated with Flavofeed, Probiotic and Avilamicin



*Obs: **Flavofeed**®: 300 ppm from the 1º day to the 42° day / Probiotic: 400 ppm from the 1º day to the 21° and 1000 ppm from the 21° day to the 42° day / Avilamicin: 10 ppm from the 1º day until the 35° day.*

Figura 7 - EEF within groups of animals treated with Flavofeed, Probiotic and Avilamicin



Obs: ***Flavofeed®****: 300 ppm from the 1º day to the 42° day / Probiotic: 400 ppm from the 1º day to the 21° and 1000 ppm from the 21° day to the 42° day / Avilamicin: 10 ppm from the 1º day until the 35° day.*

Figura 8 - Lipid oxidation analyzed by TBA method from chest samples taken from groups of animals treated with Flavofeed, Probiotic and Avilamicin