VIUSID VET ® PROTOCOL

Effectiveness of the nutritional preparation Viusid-Vet® from Catalysis on the productive and immunological variables in broilers
Introduction

Nowadays, intensive poultry farming involves taking certain measures to achieve maximum production in the shortest amount of time possible.

These measures include having good biosafety programmes, balanced diets, optimal vaccination schedules, using growth enhancers and products that improve the immune response (immunomodulators).

In this way, Viusid Vet® can improve all the productive parameters and optimize the immune system of broilers.
Study carried out at the commercial poultry farm in Querétaro, Mexico

**Objective:** To prove the effectiveness of Viusid® liquid* on the productive variables and the immune response in broilers.

**Material and Methods:** 60,000 birds from the Ross x Ross strain, one day old, were divided into two groups of 30,000 birds in each group. One of these was treated with Viusid liquid® in the ratio of 270 ml of the product/1000 L of water throughout the whole production cycle and the other group, that was not treated, was the control group.

**Length of study:** 49 days.
Study carried out at the commercial poultry farm in Querétaro, Mexico

**Feed:** Administered in stages with an automatic feed system

**Type of water dispenser:** Cupless nipple drinkers

**Product:** Viusid\textsuperscript{®} liquid*, 270 ml bag

**Dosage:** 270 ml of product/1000 L of water

**Viusid evaluation:** Statistical analysis: For weight, feed conversion and mortality rate

The test for normality was used for the 3 variables and with the Measurement Analysis of Variance, IBM-SPSS 19 statistical pack, with confidence level $P<0.05$. 
Study carried out at the commercial poultry farm in Querétaro, Mexico.

Parameters to be assessed were:
- Viability at 49 days (%)
- Weekly weight at 49 days
- Cumulative feed conversion up to 49 days

Immunological variables to be assessed were:
- Humoral immune response test (HI): Haemagglutination-inhibition test
- Cellular immune response: Delayed-type basophilic hypersensitivity, hemograms.

Histological variables to be assessed were:
- Histopathological evaluation of lymphoid organs: Thymus, spleen and Fabricio’s bag.
### PRODUCTIVE PARAMETER RESULTS

<table>
<thead>
<tr>
<th>Week</th>
<th>VIUSID Weight</th>
<th>Control Weight</th>
<th>% C. Mort</th>
<th>% C. Mort</th>
<th>C. Conv.</th>
<th>C. Conv.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.1475</td>
<td>0.1440</td>
<td>2%</td>
<td>0.67%</td>
<td>1.0130</td>
<td>1.0885</td>
</tr>
<tr>
<td>2</td>
<td>0.3075</td>
<td>0.3150</td>
<td>-2%</td>
<td>1.27%</td>
<td>1.2490</td>
<td>1.2565</td>
</tr>
<tr>
<td>3</td>
<td>0.6520</td>
<td>0.6310</td>
<td>3%</td>
<td>1.63%</td>
<td>1.4380</td>
<td>1.4815</td>
</tr>
<tr>
<td>4</td>
<td>1,180</td>
<td>1,160</td>
<td>2%</td>
<td>2.45%</td>
<td>1.508</td>
<td>1.660</td>
</tr>
<tr>
<td>5</td>
<td>1,638</td>
<td>1,655</td>
<td>-1%</td>
<td>4.15%</td>
<td>1.636</td>
<td>1.806</td>
</tr>
<tr>
<td>6</td>
<td>2,234</td>
<td>2,205</td>
<td>1%</td>
<td>4.27%</td>
<td>1.783</td>
<td>1.991</td>
</tr>
<tr>
<td>7</td>
<td>2,947</td>
<td>2,905</td>
<td>1%</td>
<td>5.95%</td>
<td>1.940</td>
<td>2.148</td>
</tr>
</tbody>
</table>
PRODUCTIVITY INDEX

Results: Include viability, weight, cumulative feed conversion and days in fattening period.
Formula: \( \frac{\% \text{ viability} \times \text{ weight in kg}}{(\text{days old} \times \text{cum. conversion})} \times 100 \).

<table>
<thead>
<tr>
<th>Productivity index at 49 days old</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Control group</td>
<td>255</td>
</tr>
<tr>
<td>Viusid-Vet group</td>
<td>291</td>
</tr>
</tbody>
</table>

Viusid improved the productivity index by 41 points
Humoral immune response (HI-ND)

- Antibody titres against the Newcastle’s disease virus

The group treated with VIUSID® had a higher concentration of antibody titres (P<0.05) against the Newcastle’s disease virus than the control group, which means that the broilers treated with VIUSID® produced a logarithm with more antibodies than the control group when they were 21 days old. This trend continued onto 49 days old, where the antibody concentration increased in 3 logarithms.
Cellular immune response (Hemogram)

- Delayed-type hypersensitivity basophilic test

For the cellular response assessed by using the delayed-type hypersensitivity basophilic test in broilers at the start-up stage of the clinical trial, the interdigital thickness increased (P<0.01) in broilers treated with VIUSID®. This implies that the thickness of the interdigital membrane in broilers treated with VIUSID® was 4.8 times thicker than that of the control group.
Hematology

- **Thrombocytes.** - The thrombocytes are small, irregular shaped, cytoplasmic fragments that do not have a nucleus. They play a major role in hemostasis and they are a natural source of growth factors.

![Bar graph showing platelet count in Treatment Group and Control Group]

The group treated with VIUSID® had a higher platelet count in the blood, namely thrombocytosis, (P<0.05) than the control group. (A more abundant source of natural growth factors).
The results of the studies on the relative weight of the thymus and the spleen increased in the treatment group (VIUSID®), in which there were significant statistical differences (P<0.05). This suggests that it has a positive effect whereby the relative weight of these lymphoid organs improves thus making the birds healthier.
Histology

• Histopathological evaluation of the Fabricio’s bag

On evaluating the Fabricio’s bag when the birds were 21 and 49 days old, the control group had a higher lymphoid lesion average that varied from mild to severe atrophy, whilst the treatment group (VIUSID®) had a significantly lower lymphoid lesion average statistically speaking (P<0.05).
The thymus was assessed by measuring the thymus cortex in microns when the birds were 21 days old. The resulting numerical differences are insignificant. After 49 days, however, statistically speaking, the treatment group (VIUSID®) had a significantly thicker thymus cortex (P<0.05) than the control group.
Bibliography


Conclusions

• Considering the results obtained in this clinical trial, **VIUSID®** does act like an immunostimulant, as was conclusively proved throughout this study in the humoral immune response evaluation and through the measured protective antibody titres against the Newcastle’s disease virus.
Conclusions

• The cellular immune response (delayed-type hypersensitivity basophilic test) also had significantly positive results, namely, the increase in the thickness of the interdigital membrane of the broilers treated with VIUSID® when they were 23 and 49 days old, which is a sign of an improved immune response. A positive effect was also observed in the preservation of the histological structure of the Fabricio’s bag when the birds were 21 days old and then at 49 days old.
Conclusions

• Another important finding is the increase in the relative weight percentage of the lymphoid organs, like the thymus and the spleen, which implies that the birds were healthier.

• The product could only be used until the 5th week, as it is assumed that from this time onwards the immune system had been stimulated enough to be able to complete the whole production cycle without having any infectious problems.
Conclusions

1. **Viusid-liquid** improves the productive parameters such as the cumulative and weekly weight

2. **Viusid-liquid** improves the cumulative and the weekly feed conversion

3. **Viusid-liquid** improves the productivity index by 41 points compared with the control group that is not given Viusid-liquid
Conclusions

4. **Viusid-liquid** also had beneficial effects in terms of producing more lymphoid cells, better weight and hence bigger lymphoid nodules in the lymphoid organs, spleen, thymus and Fabricio’s bag, which could be related to be birds being healthier.

5. **Viusid-liquid** with all the benefits obtained in the productive parameters and the effectiveness of preserving and improving the immune response in organs and lymphoid cells, the hypothesis that it has an immunomodulatory effect on the weekly and cumulative variables of commercial broilers is confirmed.
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