**Tables**

Table1. Vaccination program for breeding chicks and pullets

|  |  |  |  |
| --- | --- | --- | --- |
| **Age (Day)** | **Information** | **Vaccine** | **Method** |
| 1. | Live | ND+IB | Sprey |
| 1. | Live | COCCIDIOSIS | Oral |
| 14. | Live | IB 4/91 | Sprey |
| 18. | Live | IBD | Drinking water |
| 21. | Live | ND+IB | Sprey |
| 26. | Live | IBD | Drinking water |
| 49. | Live | ND+IB | Sprey |
| 56. | Live | SHS | Sprey |
| 70. | Live | IB 4/91 | Sprey |
| 84. | Live | AE+Fowl Pox+CIAV | Wing |
| 84. | Live | SHS | Sprey |
| 84. | Inactive | SE | Subcutaneous |
| 126. | Inactive | IBD+ND+IB+TRT | Intramuscular |
| 126. | Inactive | SE | Subcutaneous |
| 140. | Live | ND+IB | Sprey |

Newcastle Disease (ND), Infectious Bronchitis (IB), Infectious Bursal Disease (IBD), Avian Encephalomyelitis (AE), Chicken Infectious Anaemia Virus (CIAV), Swollen Head Syndrome (SHS), Salmonella Enteritidis (SE), Turkey Rhinotracheitis (TRT)

Table 2. Feedstuffs and nutrient compositions of the diets; for chicks (1-28 days old)1, for pullets (28-154 days old)2, for broiler breeders (155+ days old)3

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Ingredients** | **%** | | | **Nutrient composition** | **%** | | |
|  | **1** | **2** | **3** |  | **1** | **2** | **3** |
| Corn | 547.00 | 619.00 | 687.28 | Crude protein | 19.000 | 15.000 | 15.000 |
| SBM\* | 229.24 | 109.24 | 154.16 | Eher extract | 3.050 | 3.000 | 3.370 |
| Wheat bran | 72.97 | 109.15 | 13.03 | Crude Fiber | 4.080 | 4.860 | 3.550 |
| Wheat meal | 60.00 | 60.00 | 60.00 | Total Ash | 5.930 | 5.200 | 10.700 |
| SFM\*\* | 50.00 | 100.00 | 50.00 | Total P | 0.763 | 0749 | 0.583 |
| Limestone powder | 11.33 | 10.14 | 70.18 | Av. Phospho. | 0.450 | 0.420 | 0.350 |
| MCP\*\*\* | 9.41 | 7.75 | 6.79 | Calcium | 1.000 | 0.900 | 3.000 |
| Vegetable oil | 5.00 | 1.81 | 6.57 | DL-Methionine | 0.423 | 0.320 | 0.300 |
| Salmonella inhibit | 3.00 | 3.00 | 2.00 | Lysine | 1.010 | 0.740 | 0.740 |
| Broiler mix\*\*\*\* | 3.00 | 3.00 | 3.00 | Tryptophan | 0.236 | 0.175 | 0.175 |
| Salt | 2.09 | 2.20 | 2.20 | Threonine | 0.724 | 0.565 | 0.567 |
| DL-methio. (99%) | 1.18 | 0.47 | 0.39 | İsoleucine | 0.798 | 0.585 | 0.624 |
| Toxin binder | 1.00 | 1.00 | 1.00 | Histidine | 0.520 | 0.403 | 0.416 |
| Vitamin D3 | 1.00 | 1.00 | 0.50 | Valine | 0.901 | 0.700 | 0.715 |
| NaHCO3 | 1.00 | 0.71 | 1.06 | Leucine | 1.573 | 1.244 | 1.335 |
| Organic minerals | 1.00 | 1.00 | 1.00 | Arginine | 1.293 | 0.969 | 0.995 |
| Probiotics | 1.00 | 0.50 | - | Phenylalanine | 0.922 | 0.692 | 0.732 |
| Lysine (99%) | 0.68 | 1.67 | 0.33 | Clor | 0.167 | 0.202 | 0.160 |
| Threonine | 0.11 | 0.27 |  | Sodium | 0.160 | 0.160 | 0.160 |
| Vitamin E | - | - | 0.50 | Potassium | 0.814 | 0.634 | 0.600 |
|  |  |  |  | Linoleic acid | 1.387 | 1.325 | 1.552 |
|  |  |  |  | Cholin mg/kg | 0.311 | 0.285 | 0.286 |
| Total | 1000.00 | 1000.00 | 1000.00 | ME\*\*\*\*\* | 2800 | 2800 | 2800 |

SBM\*; Soybean meal (46 %CP), SFM\*\*; Sunflower meal (36 %CP), MCP (%22.7 Ca)\*\*\*; Monocalcium fosfat, Broiler mix\*\*\*\*; V+M+E=Vitamin +Mineral+Enzyme, ME\*\*\*\*\*; Metabolisable Energy (Kcal/kg)

Table 3. Groups used in the preliminary trial and propolis extract doses applied

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Control group** | | **Groups with propolis extract addition** | | | | |
| **Propolis extract (ppm)** | 0 | 100 | | 200 | 400 | 800 |
| **Number of animals (pieces) housed individually** | 5 | 5 | | 5 | 5 | 5 |
| **Number of eggs used in statistical analysis** | 33 | 33 | | 33 | 33 | 33 |

Table 4. Egg yolk and white weights

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Control** | |  | | **100 ppm** | |  | | **200 ppm** | |  | | **400 ppm** | |  | | **800 ppm** | |  | | **P** | |
| **Egg weight (g)** |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 69.536±0.564 b |  | | 66.731±0.892 a | |  | | 69.274±0.907 b | |  | | 68.646±0.799 ab | |  | | 66.860±0.700 a | |  | | 0.030 | |
| **Egg white (g)** |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 38.255±0.671 |  | | 37.074±0.583 | |  | | 37.300±0.654 | |  | | 37.744±0.556 | |  | | 36.970±0.669 | |  | | 0.596 | |
| **Egg yolk (g)** |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 19.106±0.332 b |  | | 17.370±0.378 a | |  | | 18.900±0.369 b | |  | | 19.209±0.413 b | |  | | 17.617±0.315 a | |  | | 0.000 | |

Values are mean ± SEM in each group. a-b: Means for the same treatment and effect or with different letter differ significantly respectively (P<0.05).

Table 5. Immunoglobulin values ​​in egg whites of breeder parents to determine propolis extract dose

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Control** |  | **100 ppm** |  | **200 ppm** |  | **400 ppm** |  | **800 ppm** |  | **P** |
| **IgG µg/ml** |  |  |  |  |  |  |  |  |  |  |  |
| 2.183±0.080 |  | 2.489±0.073 |  | 2.447±0.092 |  | 2.234±0.825 |  | 2.388±0.135 |  | 0.145 |
| **IgA µg/ml** |  |  |  |  |  |  |  |  |  |  |  |
| 4.136±1.728 |  | 3.684±1.614 |  | 2.138±1.128 |  | 2.274±1.400 |  | 2.013±0.746 |  | 0.750 |
| **IgM µg/ml** |  |  |  |  |  |  |  |  |  |  |  |
| 3.487±0.267c |  | 5.403±0.305a |  | 4.094±0.301bc |  | 4.654±0.405ab |  | 3.558±0.300c |  | 0.000 |

Values are mean ± SEM in each group. a-b: Means for the same treatment and effect or with different letter differ significantly respectively (P<0.05).

Table 6. Immunoglobulin values ​​in egg yolk of breeder parents to determine propolis extract dose

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Control** |  | **100 ppm** |  | **200 ppm** |  | **400 ppm** |  | **800 ppm** |  | **P** |
| **IgG mg/ml** |  |  |  |  |  |  |  |  |  |  |  |
| 15.290±0.840 |  | 15.868±0.553 |  | 15.315±0.668 |  | 17.495±0.652 |  | 14.551±0.931 |  | 0.078 |
| **IgA µg/ml** |  |  |  |  |  |  |  |  |  |  |  |
| 13.937±0.280b |  | 16.817±0.296a |  | 17.064±0.280a |  | 19.453±0.497a |  | 12.575±0.747b |  | 0.000 |
| **IgM µg/ml** |  |  |  |  |  |  |  |  |  |  |  |
| 4.501±0.817 |  | 5.462±1.013 |  | 6.103±0.880 |  | 5.864±1.386 |  | 5.931±0.732 |  | 0.066 |

Values are mean ± SEM in each group. a-b: Means for the same treatment and effect or with different letter differ significantly respectively (P<0.05).

Table 7. Effect of 400 ppm propolis extract supplementation on physical egg quality.

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables** | **Control** | **400 ppm** | **p-value** |
| **Egg weight (g)** | 71.900±1.033 | 70.070±1.075 | 0.908 |
| **Egg shape index** | 77.903±0.060 | 77.862±0.070 | 0.657 |
| **Egg specific gravity (g/ml)** | 1.069±0.000 | 1.071±0.001 | 0.090 |
| **Eggshell strength (g/cm2)** | 2.770±0.180 | 2.930±0.212 | 0.570 |
| **Eggshell thickness (mm)** |  |  |  |
| **Blunt end** | 35.335±0.190 | 35.010±0.185 | 0.593 |
| **Pointed end** | 35.550±0.175a | 36.345±0.181b | 0.001 |
| **İntermediate** | 35.867±0.163 | 36.027±0.174 | 0.614 |
| **Eggshell weight (g)** | 8.639±0.155 | 8.740±0.698 | 0.651 |
| **Albumen index** | 6.445±0.159 | 6.379±0.149 | 0.763 |
| **Yolk index** | 39.861±0.119 | 39.707±0.103 | 0.331 |
| **Haugh unit** | 64.177±0.448a | 65.498±0.401b | 0.029 |

Values are mean ± SEM in each group. a-b: Means for the same treatment and effect or with different letter differ significantly respectively (P<0.05).