Supplementary Material

**A screenshot of a graph

Description automatically generated**

**Figure 1.** Heatmap illustrating correlation coefficient between purine content, uric acid, SOD, and growth traits in A) breast meat, and B) Liver of purebred and crossbred Thai native chickens. Orange color means negative correlation, whereas green color represents positive correlation.

Total = total purine, Aden = adenine, Guan = guanine, Xant = xanthine, Hypo = hypoxanthine, Uric = uric acid, SOD = superoxide dismutase**,** BW0 = birth weight, BW2, BW4, BW6, BW8, BW = body weight at 2, 4, 6, 8, 10 weeks of age, ADG0-2, ADG2-4, ADG4-6, ADG6-8, ADG8-10 = average daily gain during 0-2, 2-4, 4-6, 6-8, 8-10 weeks of age, BrC6, BrC8, BrC10 = breast circumference at 6, 8, 10 weeks of age.

**A diagram of a diagram of liver and liver

Description automatically generated with medium confidence**

**Figure 2.** Three-dimensional component plot of purine content, uric acid, SOD, and growth traits in (A) breast meat and (B) liver by principal component analysis; PC 1 (red group), PC 2 (blue group), and PC 3 (orange group).

***Supplementary Tables***

**Table 1.** Characteristics of growth traits of purebred and crossbred Thai native chickens (mean±SD).

|  |  |  |  |
| --- | --- | --- | --- |
| **Trait** | **Chicken groups** | | |
| **100%TN** | **50%TN** | **25%TN** |
| Body weight (BW; g) |  |  |  |
| BW0 | 33.61±3.05 | 36.17±3.91 | 36.63±2.96 |
| BW2 | 138.33±14.70c | 163.50±13.41b | 258.19±12.19a |
| BW4 | 340.15±34.62c | 416.71±36.52b | 833.31±31.37a |
| BW6 | 605.76±47.76c | 745.42±59.42b | 1502.33±44.80a |
| BW8 | 862.30±84.29c | 1108.83±115.70b | 2191.94±157.87a |
| BW10 | 1146.12±130.29c | 1476.00±204.58b | 2881.55±261.15a |
| Average Daily Gain (ADG; g/day) |  |  |  |
| ADG0-2 | 15.60±2.14c | 18.45±2.31b | 36.83±3.46a |
| ADG2-4 | 13.62±1.14c | 16.89±1.40b | 34.90±1.77a |
| ADG4-6 | 15.28±1.69c | 19.68±1.93b | 38.33±2.83a |
| ADG6-8 | 18.18±3.06c | 23.12±2.66b | 42.61±2.18a |
| ADG8-10 | 15.44±3.77c | 20.40±2.17b | 39.47±2.49a |
| Breast circumference (BrC; cm) |  |  |  |
| BrC6 | 19.64±0.79c | 21.35±0.68b | 28.03±0.43a |
| BrC8 | 21.56±0.72c | 23.10±0.73b | 31.12±0.70a |
| BrC10 | 23.14±0.74c | 26.86±0.86b | 36.62±0.88a |
| Feed intake (FI; g/bird/day) |  |  |  |
| FI0-2 | 16.44±0.29c | 18.35±0.28b | 20.03±0.33a |
| FI2-4 | 31.20±0.32c | 35.10±0.33b | 40.12±0.40a |
| FI4-6 | 42.77±0.49c | 48.35±0.48b | 55.03±0.53a |
| FI6-8 | 50.56±0.52c | 55.10±0.53b | 63.12±0.60a |
| FI8-10 | 58.30±0.54c | 70.86±0.56b | 80.62±0.78a |
| Feed conversion ratio (FCR) |  |  |  |
| FCR0-2 | 3.30±0.06c | 3.15±0.05b | 2.52±0.03a |
| FCR2-4 | 2.66±0.07c | 2.60±0.05b | 2.22±0.03a |
| FCR4-6 | 2.57±0.05c | 2.44±0.04b | 2.03±0.02a |
| FCR6-8 | 2.23±0.04c | 2.10±0.03b | 1.88±0.02a |
| FCR8-10 | 2.00±0.04c | 1.88±0.03b | 1.54±0.02a |

100%TN = purebred Thai native (TN) chickens, 50%TN = 50% Thai native with 50% broiler chickens, 25%TN = 25% Thai native with 75% broiler chickens.

BW0 = birth weight, BW2, BW4, BW6, BW8, and BW10 = body weight at 2, 4, 6, 8, and 10 weeks of age, ADG0-2, ADG2-4, ADG4-6, ADG6-8, and ADG8-10 = average daily gain during 0-2, 2-4, 4-6, 6-8, and 8-10 weeks of age, BrC6, BrC8, and BrC10 = breast circumference at 6, 8, and 10 weeks of age FI0-2, FI2-4, FI4-6, FI6-8, and FI8-10 = feed intake during 0-2, 2-4, 4-6, 6-8, and 8-10 weeks of age, FCR0-2, FCR2-4, FCR4-6, FCR6-8, and FCR8-10 = feed conversion ratio during 0-2, 2-4, 4-6, 6-8, and 8-10 weeks of age,

a, b, c = different superscript letters differed significantly between chicken groups (within each row) at *P* < 0.05.

**Table 2.** Characteristics of purine content and uric acid in breast meat and liver and SOD in the blood of purebred and crossbred Thai native chickens (mean±SD).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Trait** | **Breast meat** | | |  | **Liver** | | |
| **100%TN** | **50%TN** | **25%TN** |  | **100%TN** | **50%TN** | **25%TN** |
| Total purine (mg/100 g) | | | | | | | |
| 6 wk | 150.41±6.58b | 161.67±6.11b | 178.37±6.74a |  | 315.58±12.41b | 347.59±12.56b | 383.15±13.80a |
| 8 wk | 146.75±5.33b | 158.97±5.20b | 172.93±5.12a |  | 301.11±11.64b | 322.36±12.34b | 356.16±13.15a |
| 10 wk | 142.13±5.81b | 151.49±5.61b | 161.68±5.00a |  | 279.84±11.56b | 289.63±11.30b | 327.40±13.28a |
| Adenine (mg/100 g) | | | | | | | |
| 6 wk | 30.30±1.91b | 35.47±1.55b | 39.77±1.10a |  | 108.88±6.56b | 125.93±6.59b | 137.51±6.21a |
| 8 wk | 29.55±1.88b | 33.63±1.06b | 38.33±1.93a |  | 101.54±5.55b | 114.75±5.55b | 131.96±6.03a |
| 10 wk | 27.23±1.95b | 30.23±1.44b | 34.63±1.49a |  | 94.25±5.17b | 101.73±5.90b | 121.38±6.40a |
| Guanine (mg/100 g) | | | | | | | |
| 6 wk | 33.03±1.15b | 36.27±1.41b | 42.55±2.55a |  | 135.44±8.67b | 143.30±8.27b | 159.85±9.92a |
| 8 wk | 32.25±1.24b | 36.90±1.44b | 40.70±2.66a |  | 131.42±6.34b | 135.83±9.43b | 145.60±9.34a |
| 10 wk | 33.17±1.26b | 34.13±1.67b | 38.95±2.09a |  | 129.13±7.43b | 127.40±6.08b | 138.84±9.95a |
| Xanthine (mg/100 g) | | | | | | | |
| 6 wk | 1.83±0.58b | 1.90±0.25b | 3.60±0.75a |  | 55.88±3.34b | 60.43±3.95ab | 66.54±3.93a |
| 8 wk | 1.70±0.44b | 1.87±0.55b | 3.20±0.56a |  | 50.72±4.42b | 56.20±3.27ab | 59.80±3.92a |
| 10 wk | 1.63±0.31b | 1.75±0.47b | 2.90±0.43a |  | 43.22±3.43b | 48.25±3.08ab | 51.38±3.95a |
| Hypoxanthine (mg/100 g) | | | | | | | |
| 6 wk | 85.25±4.39b | 88.03±4.23b | 92.45±4.35a |  | 12.38±3.07b | 17.93±2.42a | 19.25±2.15a |
| 8 wk | 83.35±4.06b | 86.57±4.35b | 91.70±4.84a |  | 10.43±2.25b | 15.58±2.11a | 18.80±2.30a |
| 10 wk | 80.40±3.43b | 81.78±2.54b | 86.20±3.47a |  | 9.24±2.20b | 12.25±2.15a | 15.80±2.83a |
| Calculated as uric acid (mg/100 g) | | | | | | | |
| 6 wk | 181.74±4.47b | 195.29±4.26b | 214.96±5.74a |  | 366.45±5.82c | 404.97±5.75b | 446.17±6.82a |
| 8 wk | 177.34±3.28b | 191.86±4.82b | 208.64±5.61a |  | 349.16±5.07c | 375.18±5.09b | 415.41±6.07a |
| 10 wk | 171.53±3.47b | 183.04±4.73b | 194.96±4.98a |  | 324.47±5.17c | 336.71±5.94b | 381.72±5.17a |
| SOD (U/mL) | | | | | | | |
|  | **100%TN** | | **50%TN** | | | **25%TN** | |
| 6 wk | 7.08±0.58b | | 8.47±0.44b | | | 8.93±0.45a | |
| 8 wk | 6.49±0.21b | | 6.77±0.50b | | | 7.71±0.51a | |
| 10 wk | 4.88±0.30b | | 5.81±0.40b | | | 6.95±0.38a | |

Calculated as uric acid (mg/100 g) = when the molecular weights of adenine, guanine, xanthine, hypoxanthine, and uric acid = 135.1, 151.1, 136.1, 152.1, and 168.1, respectively.

Converted purine content from mg to =

a, b, c = different superscript letters differed significantly between chicken groups (within each row) separated by breast meat and liver at *P* < 0.05.