

Table 3. Growth performance traits of rabbits from 5 to 12 weeks of age as affected by experimental treatments

| Items | Initial BW (g) | Final BW (g) | DBG (g) | RGR % | DFI (g) | FC (g FI/g BG) | Viability % |
|----------------------------|-------------------|---------------------------|--------------------------|----------------------------|----------------------------|-------------------|----------------|
| WSP effects, % | NS | NS | NS | NS | * | NS | |
| 0 (Control) | 745.30±1.25 | 1976.75±5.56 | 25.13±1.34 | 89.29 ±3.12 | 99.95 ^e ±0.52 | 3.98±0.65 | 100 |
| 5 | 746.45±1.71 | 2012.25±4.95 | 25.83±0.51 | 91.60 ±1.01 | 103.33 ^d ±0.57 | 4.02±0.07 | 95 |
| 10 | 744.60±1.43 | 1998.25±5.79 | 25.58 ±0.53 | 91.23 ±1.02 | 105.45 ^c ±0.51 | 4.15±0.07 | 90 |
| 15 | 744.25±1.34 | 1976.50±4.03 | 25.15 ±0.50 | 90.42 ±1.01 | 106.82 ^b ±0.72 | 4.28±0.08 | 90 |
| 20 | 745.45±1.50 | 1964.75±3.21 | 24.88 ±0.47 | 89.83 ±0.92 | 111.43 ^a ±0.56 | 4.50±0.07 | 85 |
| Enzymes effects | NS | * | * | * | * | NS | |
| Without enzymes | 745.56±0.95 | 1894.3 ^b ±4.88 | 23.44 ^b ±0.10 | 87.01 ^b ±0.23 | 103.94 ^b ±0.60 | 4.44±0.04 | 94 |
| With enzymes | 744.86±0.86 | 2077.1 ^a ±2.33 | 27.19 ^a ±0.46 | 93.94 ^a ±1.27 | 106.85 ^a ±0.63 | 4.14±0.26 | 90 |
| Interaction effects | NS | * | * | * | * | NS | |
| 0 (Control) | 746.50±2.11 | 1921.5 ^b ±9.69 | 23.98 ^b ±0.20 | 88.07 ^{bc} ±0.48 | 98.31 ^f ±0.52 | 4.10±0.04 | 100 |
| 0(Control)X Enz. | 744.10±1.38 | 2032.0 ^a ±10.7 | 26.38 ^a ±2.26 | 90.51 ^{abc} ±6.36 | 101.60 ^c ±0.51 | 3.85±1.32 | 100 |
| 5 % WSP | 748.00±2.45 | 1912.5 ^b ±9.55 | 23.77 ^b ±0.19 | 87.53 ^{bc} ±0.42 | 101.43 ^c ±0.51 | 4.27±0.04 | 100 |
| 5 % WSP X Enz. | 744.90±2.41 | 2112.0 ^a ±8.08 | 27.90 ^a ±0.34 | 95.67 ^a ±0.64 | 105.23 ^{cd} ±0.56 | 3.78±0.05 | 90 |
| 10% WSP | 744.70±1.83 | 1895.5 ^b ±9.32 | 23.49 ^b ±0.19 | 87.16 ^c ±0.41 | 103.81 ^d ±0.46 | 4.42±0.03 | 90 |
| 10% WSP X Enz. | 744.50±2.29 | 2101.0 ^a ±9.42 | 27.68 ^a ±0.30 | 95.30 ^a ±0.73 | 107.10 ^c ±0.52 | 3.88±0.58 | 90 |
| 15% WSP | 744.50±2.28 | 1876.0 ^b ±9.39 | 23.09 ^b ±0.23 | 86.34 ^c ±0.61 | 106.53 ^c ±0.62 | 4.62±0.05 | 90 |
| 15% WSP X Enz. | 744.00±1.63 | 2077.0 ^a ±9.31 | 27.20 ^a ±0.22 | 94.49 ^a ±0.47 | 107.12 ^c ±1.34 | 3.94±0.04 | 90 |
| 20% WSP | 744.10±2.18 | 1866.0 ^b ±6.62 | 22.90 ^b ±0.14 | 85.96 ^c ±0.39 | 109.62 ^b ±0.48 | 4.79±0.04 | 90 |
| 20% WSP X Enz. | 746.80±2.05 | 2063.5 ^a ±7.96 | 26.87 ^a ±0.15 | 93.70 ^{ab} ±0.31 | 113.23 ^a ±0.60 | 4.22±0.03 | 80 |

Means having different letters at the same column within each factor are differ significantly.

* = (P<0.05),

NS= Not significant.

WSP= Wheat screening by-product, Enz.=Enzymes (1-4 β-xylanase and α-amylase), BW= Body weight, DBG= Daily body weight gain, RGR= Relative growth rate, DFI= Daily feed intake, FC = Feed conversion

Table 6. Some blood constituents of rabbits as affected by experimental treatments

| Items | Total protein (g/dl) | Albumin (g/dl) | Globulin (g/dl) | Cholesterol (mg/dl) | AST (U/L) | ALT (U/L) | Urea (mg/dl) |
|----------------------------|---------------------------|----------------|-----------------|----------------------------|---------------------------|--------------------------|--------------------------|
| WSP effects, % | * | NS | NS | * | NS | NS | * |
| 0 (Control) | 7.53 ^a ±0.15 | 4.09±0.31 | 3.45±0.18 | 116.09 ^a ±0.52 | 12.81 ±0.82 | 14.13 ±0.83 | 40.68 ^a ±0.09 |
| 5 % | 7.24 ^a ±0.16 | 3.73±0.31 | 3.51±0.37 | 113.79 ^b ±1.04 | 13.32 ±1.57 | 14.66 ±1.19 | 38.56 ^b ±0.09 |
| 10% | 6.65 ^b ±0.15 | 3.20±0.31 | 3.45±0.34 | 110.30 ^c ±0.53 | 13.19 ±1.06 | 14.69 ±1.55 | 32.76 ^c ±0.09 |
| 15% | 6.32 ^{bc} ±0.15 | 3.12±0.31 | 3.21±0.45 | 108.78 ^d ±1.03 | 13.32 ±1.56 | 14.22 ±1.36 | 31.23 ^d ±0.13 |
| 20% | 5.94 ^c ±0.15 | 3.15±0.32 | 2.79±0.34 | 106.22 ^e ±0.84 | 13.18 ±0.81 | 14.87 ±1.55 | 30.51 ^e ±0.13 |
| Enzymes effects | NS | NS | NS | * | * | * | NS |
| Without | 6.80 ±0.16 | 3.52±0.20 | 3.28±0.23 | 112.89 ^a ±0.80 | 16.39 ^a ±0.32 | 18.04 ^a ±0.30 | 34.74 ±0.94 |
| With | 6.67 ±0.16 | 3.39±0.12 | 3.28±0.21 | 109.18 ^b ±0.89 | 10.34 ^b ±0.19 | 11.39 ^b ±0.22 | 34.75 ±0.94 |
| Interaction effects | * | NS | NS | * | * | * | * |
| 0 (Control) | 7.57 ^a ±0.23 | 4.10±0.47 | 3.47±0.27 | 117.13 ^a ±0.51 | 14.91 ^d ±0.31 | 16.16 ^b ±0.47 | 40.66 ^a ±0.14 |
| 0(Control)x Enz. | 7.50 ^a ±0.23 | 4.07±0.47 | 3.43±0.27 | 115.04 ^b ±0.51 | 10.72 ^e ±0.31 | 12.10 ^c ±0.47 | 40.69 ^a ±0.14 |
| 5 % WSP | 7.37 ^{ab} ±0.22 | 3.75±0.47 | 3.62±0.39 | 116.38 ^{ab} ±0.51 | 17.41 ^b ±0.31 | 17.67 ^a ±0.47 | 38.54 ^b ±0.14 |
| 5 % WSP x Enz. | 7.10 ^{abc} ±0.23 | 3.70±0.47 | 3.40±0.68 | 111.20 ^c ±0.54 | 9.23 ^f ±0.51 | 11.62 ^c ±0.47 | 38.59 ^b ±0.14 |
| 10% WSP | 6.69 ^{bcd} ±0.23 | 3.22±0.47 | 3.48±0.68 | 111.34 ^c ±0.52 | 15.93 ^c ±0.31 | 18.71 ^a ±0.47 | 32.77 ^c ±0.14 |
| 10% WSP x Enz. | 6.61 ^{cde} ±0.23 | 3.18±0.47 | 3.43±0.29 | 109.26 ^d ±0.54 | 10.45 ^e ±0.31 | 10.68 ^c ±0.43 | 32.75 ^c ±0.14 |
| 15% WSP | 6.38 ^{de} ±0.23 | 3.13±0.47 | 3.25±0.69 | 111.35 ^c ±0.52 | 18.40 ^a ±0.31 | 18.74 ^a ±0.47 | 31.24 ^d ±0.20 |
| 15% WSP x Enz. | 6.27 ^{de} ±0.23 | 3.10±0.47 | 3.17±0.68 | 106.20 ^e ±0.52 | 10.24 ^e ±0.31 | 11.69 ^c ±0.43 | 31.22 ^d ±0.19 |
| 20% WSP | 5.98 ^{de} ±0.23 | 3.40±0.47 | 2.58±0.53 | 108.26 ^d ±0.52 | 15.29 ^{cd} ±0.22 | 18.89 ^a ±0.47 | 30.50 ^e ±0.20 |
| 20% WSP x Enz. | 5.89 ^e ±0.23 | 2.90±0.47 | 2.99±0.48 | 104.18 ^f ±0.52 | 11.07 ^e ±0.27 | 10.86 ^c ±0.43 | 30.52 ^e ±0.19 |

Means having different letters at the same column within each factor are differ significantly.

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NS= Not significant.

WSP= wheat screening by-product, Enz.=Enzymes (1-4 β-xylanase and α-amylase), AST= Aspartate aminotransferase, ALT= Alanine aminotransferase