

Egg Production and Egg Quality Enhancing Effect of Ingredient of PHYTOCEE® in Layers: *Withania somnifera* (Ashwagandha)

OBJECTIVE

To examine the impact of *Withania somnifera* root powder (WSRP) dietary supplementation on the production performance of laying hens.

MATERIALS AND METHODS

A total of 120 white leghorn laying hens at 22 weeks of age were randomly selected and distributed into five experimental groups having four replicates of six birds each. The first group was kept as a control (T₁) and given the basal diet without antibiotics while second (T₂), third (T₃), fourth (T₄) and fifth (T₅) groups were fed basal diets supplemented with WSRP @ 0.25, 0.5, 0.75 and 1%, respectively. The duration of treatment was 16 weeks. The egg production performance and egg quality parameters viz. egg mass and egg weight were evaluated.

RESULTS

Effect of *Withania somnifera* root powder on egg production, egg mass and egg weight under different dietary treatments in laying hens

Parameters(Weeks)	Treatments				
	T ₁	T ₂	T ₃	T ₄	T ₅
Hen-day egg production (%)					
22 – 24	69.15±0.79	69.81±0.93	70.62±0.94	71.87±0.81	71.32±1.08
24 – 26	70.82±0.86	72.03±1.32	70.50±3.47	73.74±0.75	72.47±1.04
26 – 28	72.03±1.14	72.85±1.33	72.73±1.29	74.55±0.80	74.45±1.09
28 – 30	73.86 ^a ±0.69	74.48 ^a ±1.05	76.62 ^{ab} ±1.08	77.61 ^b ±0.93	76.45 ^{bc} ±0.93
30 – 32	73.59±1.22	74.86±1.32	77.03±1.08	78.03±1.26	77.01±1.29
32 – 34	74.76 ^a ±0.88	78.05 ^b ±1.15	80.01 ^{bc} ±1.34	81.76 ^c ±0.76	79.55 ^{bc} ±0.90
34 – 36	69.80 ^a ±0.79	71.84 ^a ±0.92	72.93 ^{ab} ±0.85	75.49 ^b ±1.14	74.15 ^{bc} ±1.09
36 – 38	67.40±1.02	67.05±0.63	68.72±1.37	68.83±0.79	68.11±1.11
Mean	71.43 ^a ±0.52	72.62 ^{ab} ±0.66	73.64 ^{bc} ±0.83	75.23 ^c ±0.73	74.19 ^{bc} ±0.69
Egg mass production (g/day/hen)					
22 – 24	33.70±0.56	34.13±0.40	32.31±0.79	34.16±0.64	35.68±1.39
24 – 26	35.34±0.41	36.68±0.53	35.39±1.41	37.08±0.56	37.21±0.55
26 – 28	34.98±0.44	35.19±0.54	35.33±0.71	36.30±0.51	36.85±0.65
28 – 30	36.38±0.62	36.58±0.70	37.22±0.21	38.26±0.51	37.64±0.50
30 – 32	36.94 ^a ±0.47	37.33 ^a ±0.81	38.66 ^{ab} ±0.55	39.52 ^b ±0.37	38.54 ^{ab} ±0.52
32 – 34	37.27±0.34	39.52 ^b ±0.75	39.59 ^b ±1.12	40.73 ^b ±0.49	39.36 ^b ±0.32
34 – 36	35.06 ^a ±0.32	35.55 ^a ±0.87	36.44 ^{ab} ±0.38	38.35 ^b ±0.78	37.06 ^{ab} ±0.59
36 – 38	33.86±0.67	33.18±0.73	34.33±0.65	34.96±0.54	34.04±0.59
Mean	35.44 ^a ±0.27	36.02 ^{ab} ±0.39	36.16 ^{ab} ±0.47	37.42 ^b ±0.41	37.05 ^{bc} ±0.35
Egg weight (g)					
22 – 24	48.73±0.33	48.92±0.78	45.77±1.20	47.53±0.71	49.98±1.38
24 – 26	49.92±0.70	50.95±0.72	50.30±0.94	50.29±0.63	51.36±0.40
26 – 28	48.57±0.17	48.32±0.34	48.57±0.19	48.70±0.65	49.49±0.21
28 – 30	49.24±0.59	49.11±0.56	48.61±0.82	49.30±0.13	49.24±0.32
30 – 32	50.21±0.49	49.88±1.01	50.19±0.45	50.67±0.41	50.07±0.74
32 – 34	49.88±0.61	50.66±1.15	49.46±0.70	49.81±0.17	49.49±0.30
34 – 36	50.25±0.21	49.47±0.69	49.97±0.49	50.79±0.59	49.98±0.40
36 – 38	50.23±0.23	49.45±0.67	49.94±0.47	50.81±0.57	49.96±0.39
Mean	49.63±0.18	49.60±0.28	49.11±0.34	49.74±0.26	49.95±0.22

The mean values in the same row with different superscripts differ significantly (p< 0.05)

CONCLUSIONS

Egg mass and hen day egg production showed significant (p<0.05) increase as the level of *Withania somnifera* root powder inclusion increased.

OUTCOME

Hence, the dietary supplementation of *Withania somnifera* root powder leads to significant improvement in the production performance white leghorn laying hens.

Reference:

Sandeep K, Berwal R S, Ravi K. Effect of dietary supplementation of *Ashwagandha* root powder on production performance of laying hens. Haryana Veterinarian. 2020 ; 59 (2) : 201-5.