ImmunoWall®

WE PICK THE FIGHT FOR YOU

LAYING HENS

Response of laying hens to dietary yeast cell wall (*Saccharomyces cerevisiae*) supplementation.

Research was conducted at Department of Animal Sciences - University of São Paulo, Pirassununga, Brazil[1] 2014

Material and Methods

- 256 Hy-Line W-36 laying hens, 22 weeks of age, were distributed in a completely randomized design:
  - 4 treatments, with 8 replicate cages of 8 birds each:
  - T1 - Control diet (CD) (no additives).
  - T2 – CD + ImmunoWall® (0,25 kg/ton).
  - T3 – CD + ImmunoWall® (0,5 kg/ton).
  - T4 – CD + ImmunoWall® (1,0 kg/ton).
- Experimental period: from 22 to 66 weeks of age.
- Water and feed *ad libitum*.
- Light program of 16 hours per day.
- Evaluated parameters: feed intake (FI, g/d), egg production (EP, %), egg weight (EW, g), egg mass (EM = EP/100 * EW, g/d), feed per dozen eggs (FDZ = FI / EP * 12, g/dozen), and feed conversion per egg mass (FCM = FI / EM, g/g). The egg quality parameters were also measured at each 28 days: albumen height (AH, mm), yolk color (YC), Haugh unit ((HU = 100 * log (AH – 1.7 $EW^{(0.37)}$ + 7.6), breaking strength (BS, kgf), and shell thickness (ST, mm).
- The data were analyzed using the GLM procedure of SAS (2002) and means were compared by Tukey's test at 5% probability.
- Note: In the period from 26 to 50 weeks old, there was a great heatwave (early 2014) that caused a drop in feed intake and consequently in production and other parameters.

INCREASED PRODUCTION PERFORMANCE

Results

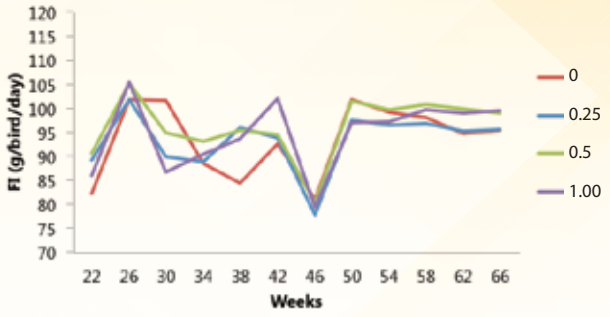
Table 1. Productive performance of laying hens from 22 to 66 weeks (heatwave from 26 to 50 weeks)

Overall averages	ImmunoWall® (kg/MT)				SEM	P[1]
	0	0.25	0.50	1.00		
Feed intake (g/bird/day)	93.51^{C}	93.20^{C}	96.24^{a}	94.58^{b}	0.42	0.039
Egg production (%)	80.67^{d}	81.55^{C}	85.35^{a}	82.77^{b}	0.54	0.013
Egg weight (g)	59.90	59.40	59.75	59.42	0.20	0.774
Egg mass (g)	48.27^{C}	48.35^{C}	50.97^{a}	49.21^{b}	0.35	0.020
FCR (kg/dz)	1.41	1.39	1.36	1.38	0.01	0.152
FCR (kg/kg)	1.97	1.95	1.90	1.95	0.01	0.213

[1]*Probabilities.*
[*]Means followed by different letters in the same row differ statistically from each other by Tukey's test (P <.05).

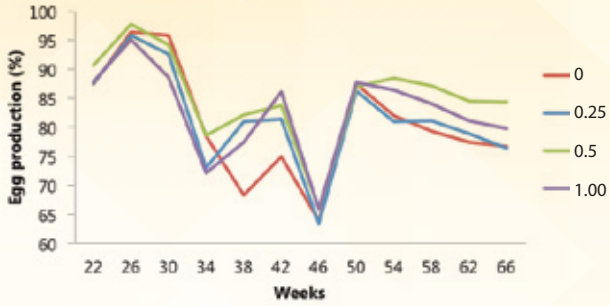
- ImmunoWall® supplementation improved (P<0.05) feed intake (96.24 vs. 93.51 g/d), egg production (85.35 vs. 80.67 %) and egg mass (50.97 vs. 48.27 g) at 0.50 kg/MT inclusion rate when compared to control group.

Figure 1. Hen feed intake (g/day) during experimental period (22 to 66 weeks)



- Drop in feed intake of all treatments; however, all levels of ImmunoWall® supplementation increased feed consumption.

Figure 2. Hen egg production (%) during experimental period (22 to 66 weeks)



- Drop in production of all treatments; however, all levels of ImmunoWall® supplementation were superior. The production was also higher after the hot weather challenge, showing greater persistence in egg laying.

Table 2. Interior and exterior quality of eggs from laying hens (22 to 66 weeks)

Overall averages	ImmunoWall® (kg/MT)				SEM	P[1]
	0	0.25	0.50	1.00		
Albumen height (mm)	7.67[b]	7.82[ab]	8.02[a]	7.80[ab]	0.04	0.037
Yolk color	4.90[a]	4.67[d]	4.83[C]	4.87[b]	0.02	0.001
Haugh unit	86.54[c]	87.64[b]	88.85[a]	87.64[b]	0.27	0.031
Breaking strength (kgf)	3.69	3.68	3.79	3.72	0.02	0.225
Shell thickness (mm)	0.37	0.36	0.37	0.36	0.001	0.091

[1]*Probabilities.*
**Means followed by different letters in the same row differ statistically from each other by Tukey's test (P <.05).*

- Regarding egg quality parameters, laying hens fed ImmunoWall® diets at 0.50 kg/MT had better (P<0.05) albumen height (8.02 vs. 7.67 mm) and Haugh units (88.65 vs. 86.54) compared to unsupplemented hens. However, yolk color was greater (P<0.05) for control group hens than for supplemented groups.

- Overall, all levels of ImmunoWall® supplementation resulted in better productive performance during the period of hot weather and after.

Conclusion

This study demonstrated that ImmunoWall® supplementation at 0.50 kg/MT to laying hens increased production performance (EP +5.8% and EM +5.6%) and internal egg quality (AH +4.6% and HU +2.4%), averaging across the entire production period.

**Data published by:*
[1]Koiyama, N.T.G., Leite, B.G.S., Araújo, L.F., Bonato, M.A.; Barbalho, R.L.C. Response of laying hens to dietary yeast cell wall (Saccharomyces cerevisiae) supplementation. In: 2015 Poultry Science Association Annual Meeting, Louisville, USA. Proceedings...,, 2015.

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