COMBINED EFFECTS OF HUMIC ACIDS AND PROBIOTIC ON HEALTH AND PERFORMANCE OF JAPANESE QUAIL

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Objectives

- To observe the growth from birth to adult (42 days of age), the reproduction performance and the microbiological composition of intestinal contents
- To investigate the combinate effects of the humic acids (Humac Natur) and probiotic (Propoul) on performance and health in Japanese quail

Conclusions

- ***Improve body weight development to some extend***
- ***Humid acids and probiotics reduce mortality at the early life***
- ***Favour laying performance***
- ***Absence of clostridia in intestinal contents in experimental groups***
- ***Long-term using of both addition decreases need for treatment and improve the animals health***

Material and Methods

- Total 111 Japanese quails – from birth to 44 weeks old
- Control group (CON) - standard diet (ME= 11.7 kJ/kg, CP≥200g/kg) ;
- Experimental group (EXP) - standard diets + humic acids (3 g Humac / kg feed) + one week in month - Lactobacillus fermentum based probiotic (Propoul 0.06 g/bird)
- Japanese quails were weighted at age of 28 and 42 days; microbiological compositions were examined at 33 (H), 40 (H+P) and 42 (H) weeks
- Laying performances were examinated for 201 days
- Statistical significances of differences were determined by using TTEST (SAS/STAT, 9.2, 2008).

Results

- Cumulative mortality at 10 days was lower in EXP (3,3%) than in CON group (10,9%
- Experimental animals were havier than control (at 28 days of age 101.6 g, 94,5 g resp;)
- Birds given both addition laid heavier (P=0.04) eggs and showed a higher (P=0.03) laying performance 165 and 151 eggs/201 days) than control
- Microbiological composition of intestinal contents confirm the absence from clostridia in the birds given Humac+Propoul (under 10KTJ/g) - lactobacillus are the competitive microflora to clostridia

Table 1: Live body weight differences between groups				
Age (days)	**Group**	**N**	$\bar{x} \pm SD$	**Probability**
28	CON	56	94,5 ± 2,04	P=0,011
28	EXP	57	101,6 ± 1,86	
42	CON	55	144,4 ± 2,41	P=0,193
42	EXP	56	148,4 ± 1,83	

Table 2: Laying performance of Japanese quail			
Characteristic	**Group**		**Probability**
	EXP	**CON**	
N Female	27	27	
Laying days	201	201	P = 0.031
Average laying (N eggs)	165,48	150,78	

Table 3: Average eggs weight			
Group	**N**	**Egg weight (g)**	
		$\bar{x} \pm SD$	**Probability**
EXP	278	11,924 ± 1,0319	P= 0.040
CON	229	11,647 ± 0,9209