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**Joint AAAP and AAAS
Animal Production Congress**



08 -12 July 2024

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AAAS and AAAP 2024 REVIEW PROCESS

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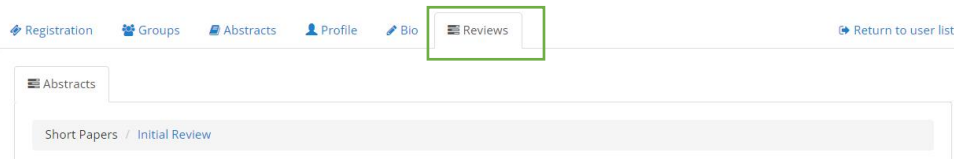
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2. Click on 'Reviews' tab across the top of the page



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Abstracts

Short Papers / Initial Review

0 Reviews	4 Pending Reviews
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★	The impact of dietary probiotic <i>Lactiseibacillus paracasei</i> NSMJ56 on gut immunity and microbiome in laying hens #11088 Review submitted:	Edit review
★	Effect of different levels of fibrolytic enzyme on feed digestibility and production performance in lactating dairy cows #10948 Review submitted:	Edit review
★	Solid state fermentation of wheat bran by <i>Ganoderma</i> spp. applied in the broiler diet #10949 Review submitted:	Edit review
★	High-voltage Electrostatic Field: A New Technique to Replace Phosphate in Emulsified Meat Products #11014 Review submitted:	Edit review

4. Please read the paper and answer the following questions. Please ensure you not the authors preference for oral etc, not everyone who has selected oral will be given an oral, however those that have only selected poster, if good enough could be offered an elevator pitch but in most cases they don't want to speak.



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Animal Science 2024 / Initial Review / Review

Society: Short Papers

Category: Poultry Science

Keywords: probiotic, *Lactiseibacillus paracasei*, gut immunity, gut microbiome, laying hen

Presentation preference: Poster Presentation

The impact of dietary probiotic *Lactiseibacillus paracasei* NSMJ56 on gut immunity and microbiome in laying hens (11088) [Link](#)

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Introduction Probiotics are defined as live microorganisms that confer health benefits upon consumption and have been used as the alternative to antibiotics in poultry production. *Lactiseibacillus paracasei* as a potent probiotic strain has been documented to have stress relieving, antioxidant, anti-inflammatory, and immune-modulatory activities. Therefore, the aim of this study was to determine the modulatory effect of dietary supplementation of *L. paracasei* strain NSMJ56 on laying performance, egg quality, intestinal histology, antioxidant status, and gut immunity and microbiota of laying hens.

Material and methods A total of 96 laying hens of Hy-Line Brown, aged 21 weeks, were randomly assigned to one of two dietary groups with eight replicates per group. Two hens were raised in cage (45 cm × 45 cm × 45 cm) in a windowless, fan-ventilated house, and the adjacent three cages were considered a replicate (n = 6 birds/replicate). These replicates were assigned in the two treatments: the control (CON) treatment, which involved a basal diet, without supplementation, and a probiotic *Lactiseibacillus paracasei* (NSMJ56) treatment involving the control diet supplemented with 1 g of *L. paracasei* NSMJ56. The trial lasted for 4 weeks. Egg production and egg weight were daily recorded and used to calculate the egg mass. At 4 weeks, eggs per replicate were collected for egg quality assessment. The remainder of the jejunum was used for lamina propria cell subpopulation measurements. An ileal segment and a pair of ceca were used to measure antioxidant markers. All statistical analyses were performed using SAS version 9.4 software.

Results Egg weight was increased ($P < 0.05$) in laying hens fed probiotic-fed diet compared with the control group. Dietary probiotics did not affect egg quality except for Haugh unit, which was improved ($P < 0.05$) in the probiotic-fed group (Table 1).

Table 1. Effect of supplementation of probiotic *Lactiseibacillus paracasei* NSMJ56 on egg quality in laying hens.

Items	CON		NSMJ56		P-value	
	Mean	SD	Mean	SD		
Yolk color	7.488	0.351	7.423	0.192	0.655	
Haugh unit	94.15	2.346	96.55	1.085	0.034	
Eggshell strength, kg/cm ²	5.595	0.567	5.349	0.405	0.334	
Eggshell thickness, mm	0.422	0.013	0.414	0.009	0.234	
Eggshell color, unit	23.775	1.300	23.500	1.888	0.739	

¹CON, control diet; NSMJ56, CON + 5×10^8 CFU/kg *L. paracasei* NSMJ56

²SD, standard deviation.

None of jejunal histology parameters including villus height, crypt depth, and villus height : crypt depth (VH:CD) ratio was affected by dietary NSMJ56 in laying hens. Dietary supplementation of *L. paracasei* NSMJ56 significantly increased the activity of catalase of ileal mucosa in laying hens compared with the control group. Flow cytometry analysis revealed that dietary probiotics elevated the CD4⁺ T cells, but not CD8⁺ T cells, in jejunal lamina propria. Based on the LEfSe analysis at the phylum and genus levels, *Erysipelotrichales*, *Erysipelotrichia*, *Flintibacter*, *Dielma*, *Hespellia*, *Coprobacter*, *Roseburia*, *Anaerostignum*, and *Coprococcus* were enriched in the probiotic group compared with the control group (Figure 1).



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5. You will have the list of questions in your reviewer information pack.

Initial Review

Section 1. Structure, quality and formatting 1a. Does the one-page paper contain original information or findings that progresses knowledge on this subject?

Select an option

1b. Overall do you find the methodology appropriate for the subject matter being examined (if applicable)?

Select an option

1.c Where results are presented, do they directly relate to the key topic of the paper & are they meaningful?

Results presented in these submissions may be preliminary or limited in nature which is ok. Please also keep in mind that there may not be traditional 'results' for some submissions, particularly those not dealing with quantitative data.

Select an option

1.d Does the paper contain all the required sections?

Papers should include: Full title, authors and affiliations, corresponding author, Introduction, Material and methods (including statistical analysis method), Results, Conclusion and implications, Acknowledgements (including financial support statement and ethics approval), and References.

Select an option

1.e Does the paper contain an adequate hypothesis/objective AND conclusion/implications statement?

All papers submitted should include a Conclusion and Implications statement at the end of the paper

Select an option

1f. Are there an excessive number of figures and tables included for a one-page paper?

Reminder: Authors were asked to prepare a one-page paper with maximum word count of 1000 words with no tables or figures. Suggested word counts were: 900 words with one (average size) figure OR table and 850 words with one (average size) figure and one (average size) table

Select an option



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Section 2. Overall reviewer feedback 2a. Please add you comments and any feedback and suggestion to the author here.

There is no requirement to upload an annotated manuscript

2b. Have you requested that the author/s complete changes?

Select an option ▼

2c. Recommended presentation type [your response here will only be available to the session co-chairs not the author]

- Oral (10-20 mins exact timing TBC)
- Elevator Pitch and poster (3-5 minute presentation plus digital poster)
- Poster

2d. Comments to Publications Committee [your response here will only be available to the session co-chairs not the author]

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Any questions/issues please email animalscience2024@kamevents.com.au or call +61 (0)7 5419 3851