doi.10.1071/AN20192

Animal Production Science 2020, **60**

Meta-analysis of probiotic-yeast (*Saccharomyces cerevisiae*) intervention on feed intake, feed efficiency and egg production indices in laying hens

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Supplementary Material

Table S1. Overview of studies used to assess the effect of yeast on feed intake, FCR, egg production in laying hens

Author /Year	Sources of variation							Variables of interest
	Trial Country	Hen's age (week)	IL (g/kg)	YF	Strains	NC	DT (days)	
Gurbuz et al. 2011	Turkey	<50	<5	YCW	Hyline	>100	<100	3,
Ozsoy et al. 2017	Turkey	<50	<5	YC	Hyline	>100	>100	1, 3, 4, 7
Ozsoy et al. 2017	Turkey	<50	<5	YC	Hyline	<100	>100	1, 2, 3, 4, 7
Ozsoy et al. 2017	Turkey	<50	<5	YC	Hyline	<100	>100	1, 2, 3, 4, 7
Hosseini et al. 2006	Iran	<50	<5	YC	Hyline	>100	<100	1, 2, 3, 4, 5
Hosseini et al. 2006	Iran	<50	<5	YC	Hyline	<100	<100	1, 2, 3, 4, 5
Hosseini et al. 2006	Iran	<50	<5	YC	Hyline	<100	<100	1, 2, 3, 4, 5
Hosseini et al. 2006	Iran	<50	<5	YC	Hyline	<100	<100	1, 2, 3, 4, 5
Koiyama et al. 2017	Brazil	<50	<5	YCW	Hyline	>100	>100	1, 3, 4, 5, 6 7
Koiyama et al. 2017	Brazil	<50	<5	YCW	Hyline	<100	>100	1, 3, 4, 5, 6, 7
Koiyama et al. 2017	Brazil	<50	<5	YCW	Hyline	<100	>100	1, 3, 4, 5, 6, 7
Yalcin et al. 2018	Turkey	<50	<5	YC	Lohmann	<100	>100	1, 2, 3, 4
Yalcin et al. 2018	Turkey	<50	<5	YC	Lohmann	<100	>100	1, 2, 3, 4
Hashim et al 2013	USA	<50	<5	YCW	Lohmann	<100	>100	4, 6
Hashim et al 2013	USA	<50	<5	YCW	Lohmann	<100	>100	4, 6
Yalcin et al. 2014	Turkey	<50	<5	YCW	Hyline	<100	>100	1, 2, 3, 4, 6, 7
Yalcin et al. 2014	Turkey	<50	<5	YCW	Hyline	<100	>100	1, 2, 3, 4, 6, 7
Yalcin et al. 2014	Turkey	<50	<5	YCW	Hyline	<100	>100	1, 2, 3, 4, 6, 7
Yalcin et al. 2014	Turkey	<50	<5	YCW	Hyline	<100	>100	1, 2, 3, 4, 6, 7
Hassanein & Soliman 2010	Egypt	>50	<5	YC	Hyline	<100	<100	1, 2, 4, 5, 6
Hassanein & Soliman 2010	Egypt	>50	>5	YC	Hyline	<100	<100	1, 2, 4, 5, 6
Hassanein & Soliman 2010	Egypt	>50	>5	YC	Hyline	<100	<100	1, 2, 3, 4, 5, 6
Hassanein & Soliman 2010	Egypt	>50	>5	YC	Hyline	<100	<100	1, 2, 3, 4, 5, 6
Pinar et al 2013	Turkey	<50	>5	YC	Lohmann	>100	>100	1, 2, 3
Pinar et al 2013	Turkey	<50	>5	YC	Lohmann	<100	>100	1, 2, 3
Pinar et al 2013	Turkey	<50	>5	YC	Lohmann	<100	>100	1, 2, 3
Yousefi & Karkoodi 2011	Iran	>50	<5	YC	Hyline	>100	<100	1, 4, 6
Yousefi & Karkoodi 2011	Iran	>50	<5	YC	Hyline	>100	<100	1, 3, 4, 6
Hewida et al. 2011	Egypt	>50	<5	YC	BB	<100	<100	1, 2, 3, 4, 5, 6, 7
Hewida et al. 2011	Egypt	>50	<5	YC	BB	<100	<100	1, 2, 3, 4, 5, 6, 7
Hewida et al. 2011	Egypt	>50	<5	YC	BB	<100	<100	1, 2, 4, 5, 6, 7
Sanaa 2013	Egypt	<50	<5	YC	Hyline	<100	>100	1, 2, 4, 6, 7
Sanaa 2013	Egypt	<50	>5	YC	Hyline	<100	>100	1, 2, 3, 4, 6, 7
Hameed et al. 2019	Pakistan	<50	<5	YC	NWL	<100	<100	1, 3, 4, 5
Hameed et al. 2019	Pakistan	<50	<5	YC	NWL	<100	<100	1, 3, 4, 5

Hameed et al. 2019	Pakistan	<50	<5	YC	NWL	<100	<100	1, 3, 4, 5
El-Kaiaty et al. 2019	Egypt	<50	<5	YC	IB	<100	<100	1, 2, 4, 6
El-Kaiaty et al. 2019	Egypt	<50	<5	YC	IB	<100	<100	1, 2, 4, 6
El-Kaiaty et al. 2019	Egypt	<50	>5	YC	IB	<100	<100	1, 2, 4, 6
Yalcin et al 2015	Turkey	>50	<5	YC	Hyline	<100	>100	1, 2, 3, 6, 7
Yalcin et al 2015	Turkey	>50	<5	YC	Hyline	<100	>100	1, 2, 3, 6, 7
Meseret et al. 2012	Ethiopia	<50	<5	YC	RIR	<100	<100	1, 2, 3, 4
Meseret et al. 2012	Ethiopia	<50	<5	YC	RIR	<100	<100	1, 2, 3, 4
Meseret et al. 2012	Ethiopia	<50	<5	YC	RIR	<100	<100	1, 2, 3, 4
Meseret et al. 2012	Ethiopia	<50	<5	YC	RIR	<100	<100	1, 2, 3, 4

1 - FI; 2 - FCR; 3 - HDEP; 4 - EW; 5 - EM; 6 - EST; 7 - HU; YF – Yeast form YC – Yeast culture; YCW – Yeast Cell Wall; BB - Brown Bovan; IB - Isa Brown; NWL - Novogen White Light; RIR - Rhode Island Red; NH - Number of chickens; IL - Inclusion level; DT - Duration of treatment.

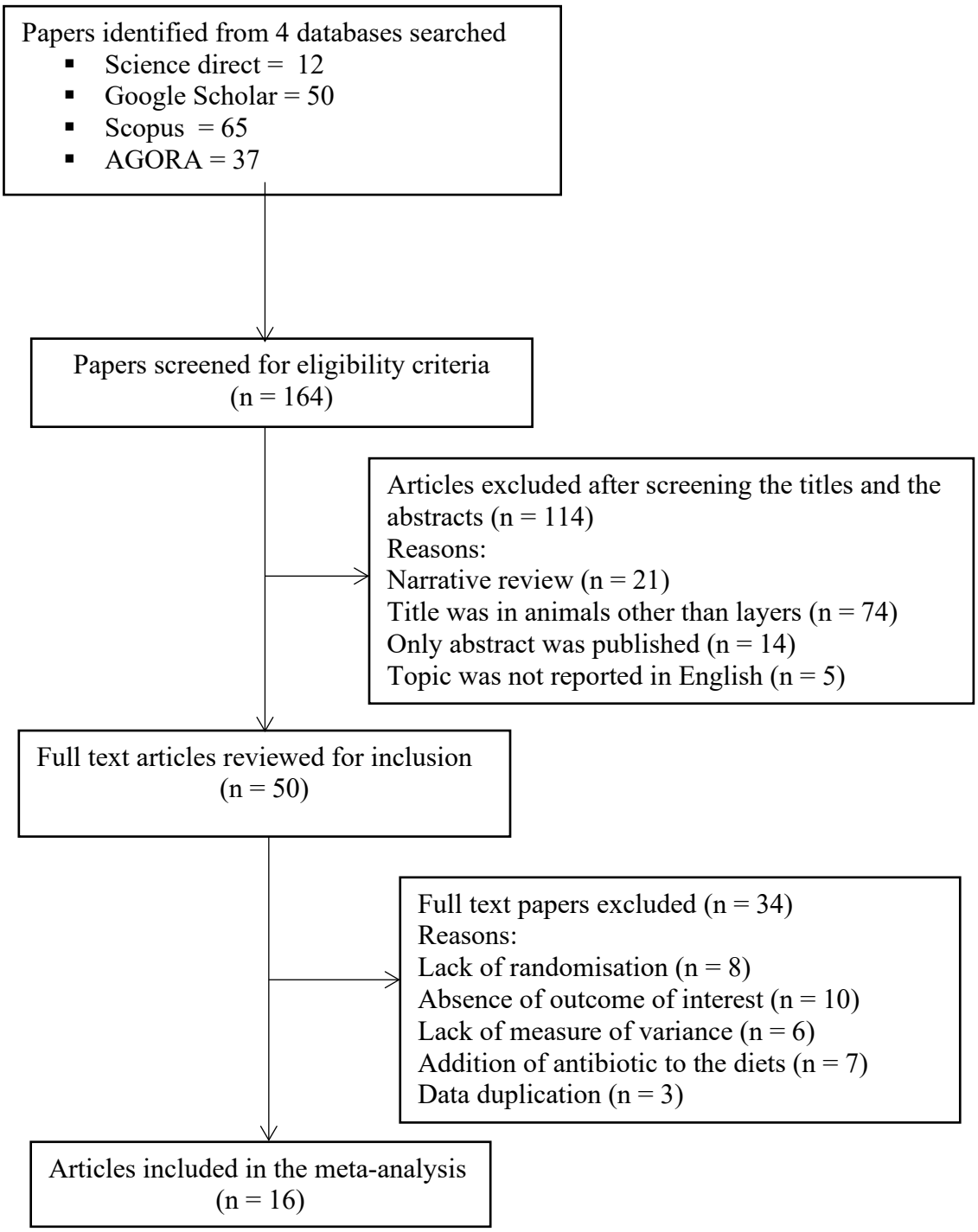

Fig. S1. Flow chart of paper selection process

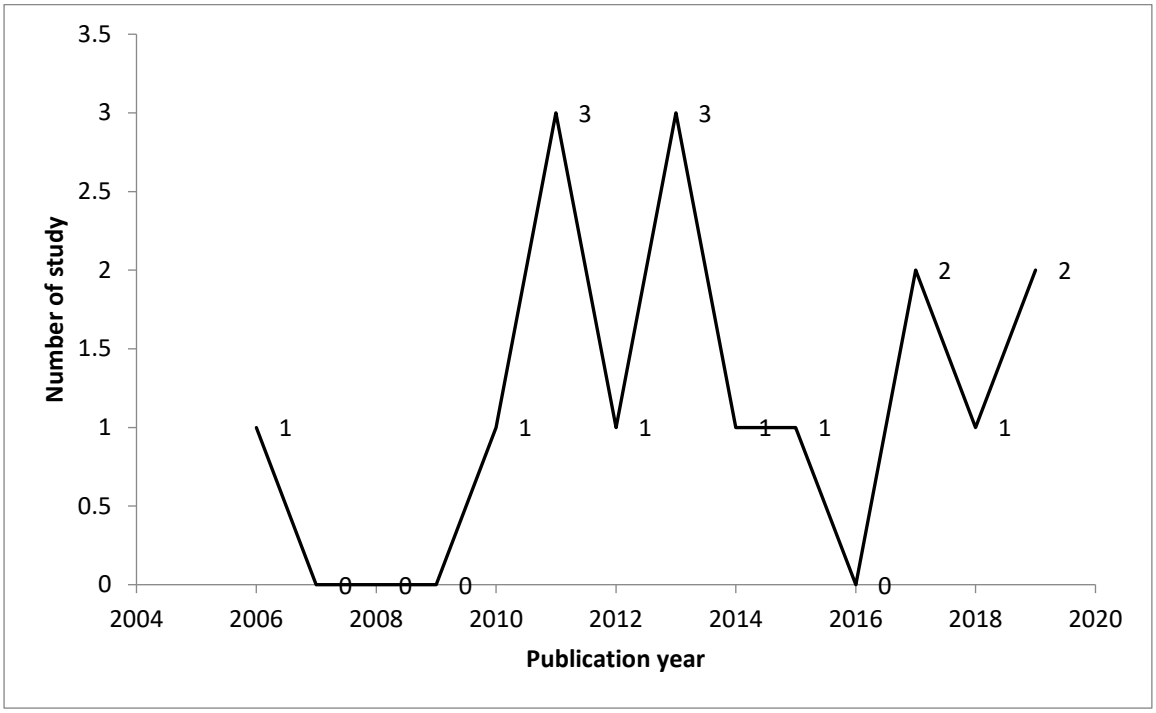

Fig. S2. The distribution of studies included in the analysis by publication year

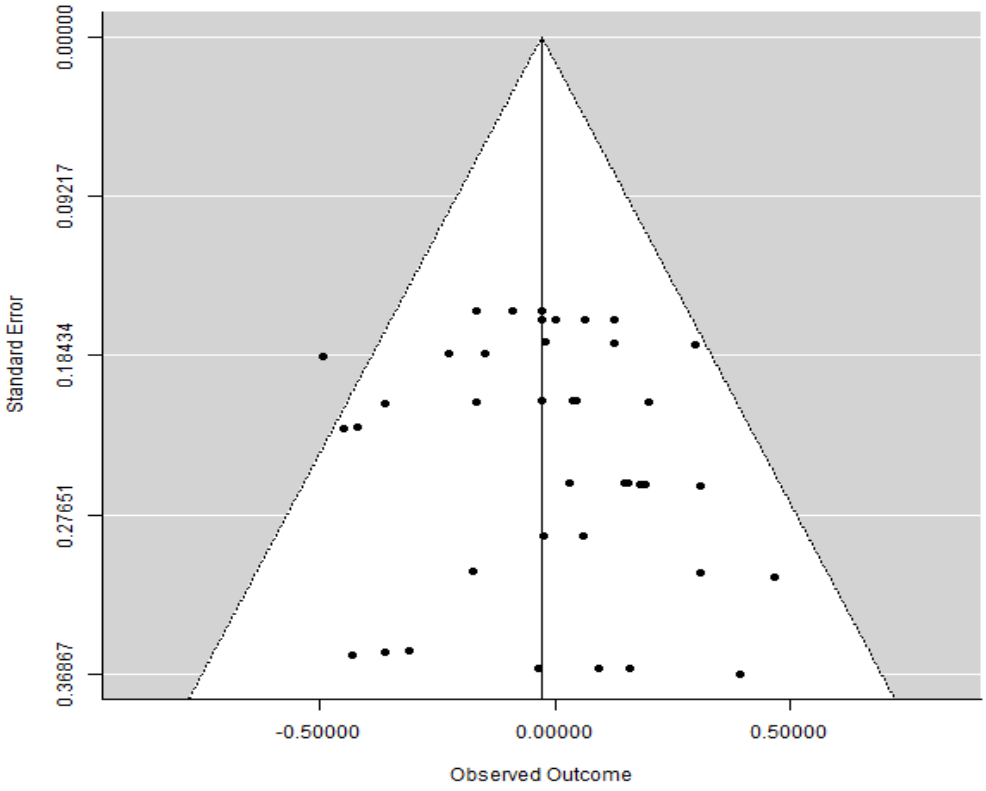

Fig. S3. Funnel plots of the effect of yeast based diets on FI in laying hens

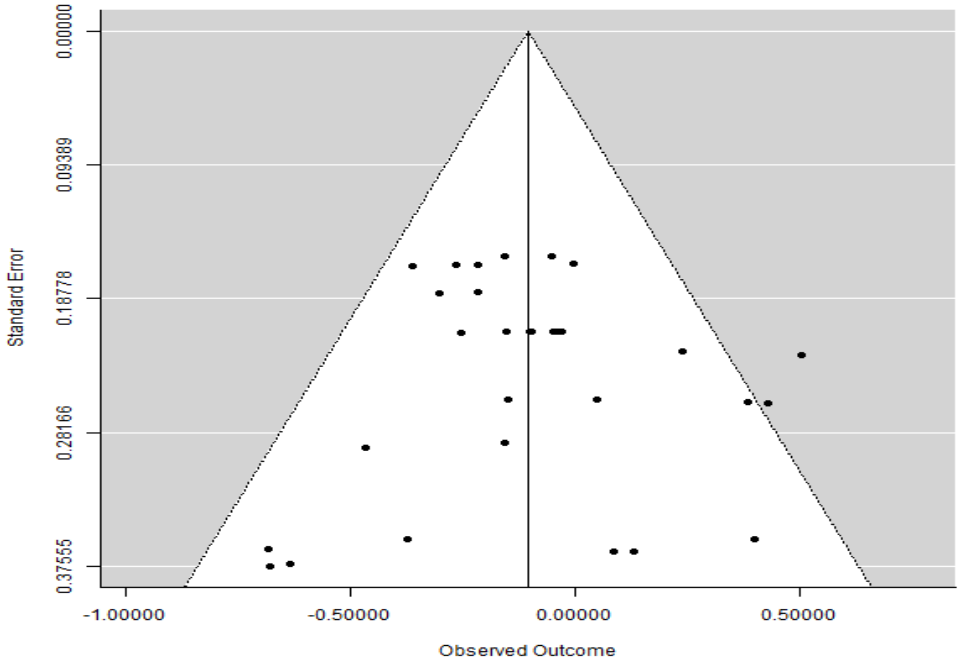

Fig. S4. Funnel plots of the impact of yeast-based diets on FCR in laying hens

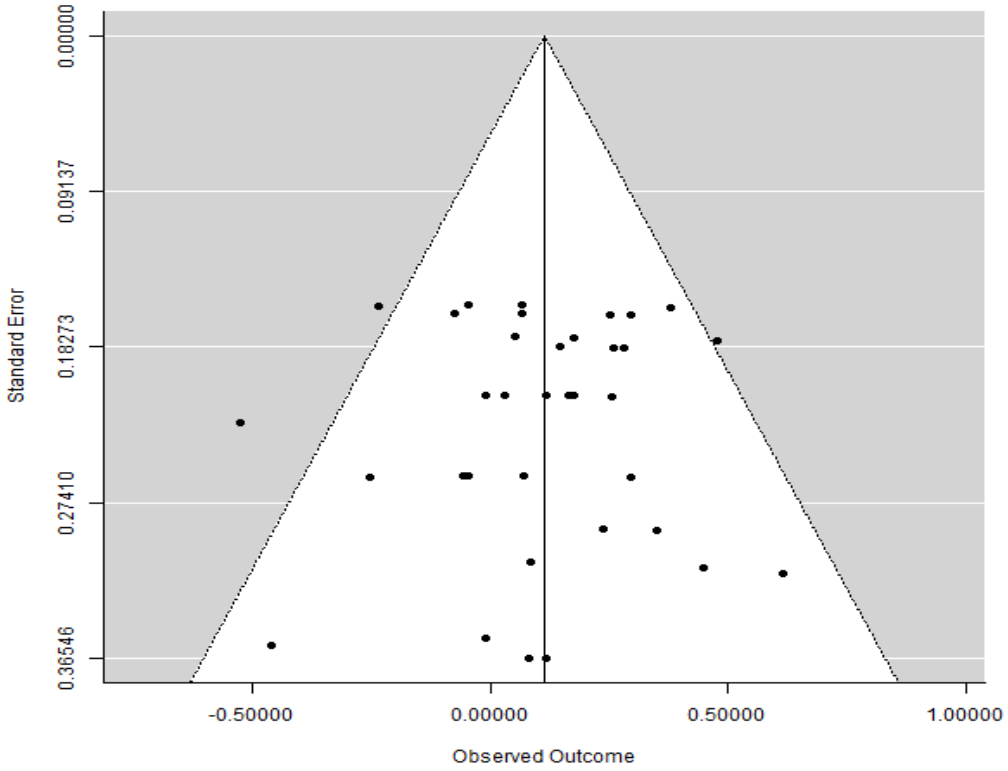

Fig. S5. Funnel plots of the impact of yeast-based diets on HDEP in laying chickens

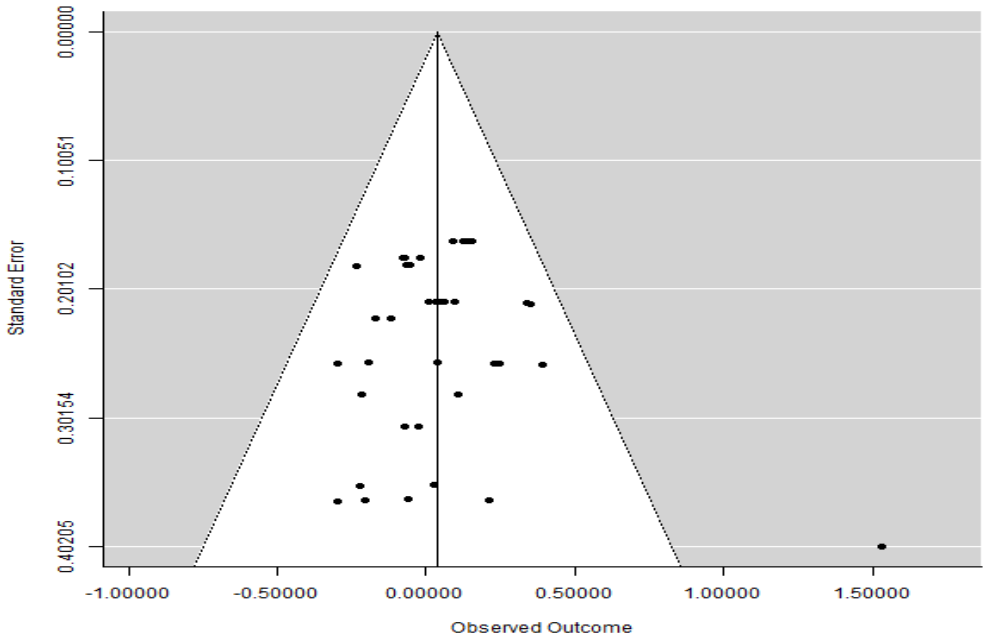

Fig. S6. Funnel plots of the effect of yeast-based diets on EW in layers

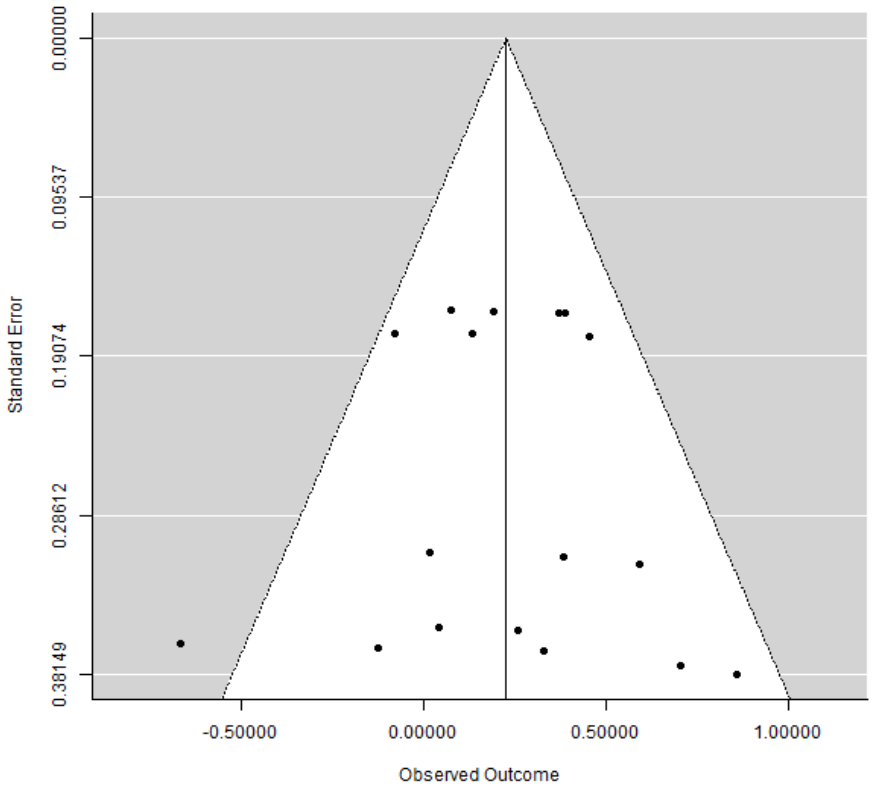

Fig. S7. Funnel plots of the effect of yeast based diets on EM in layers

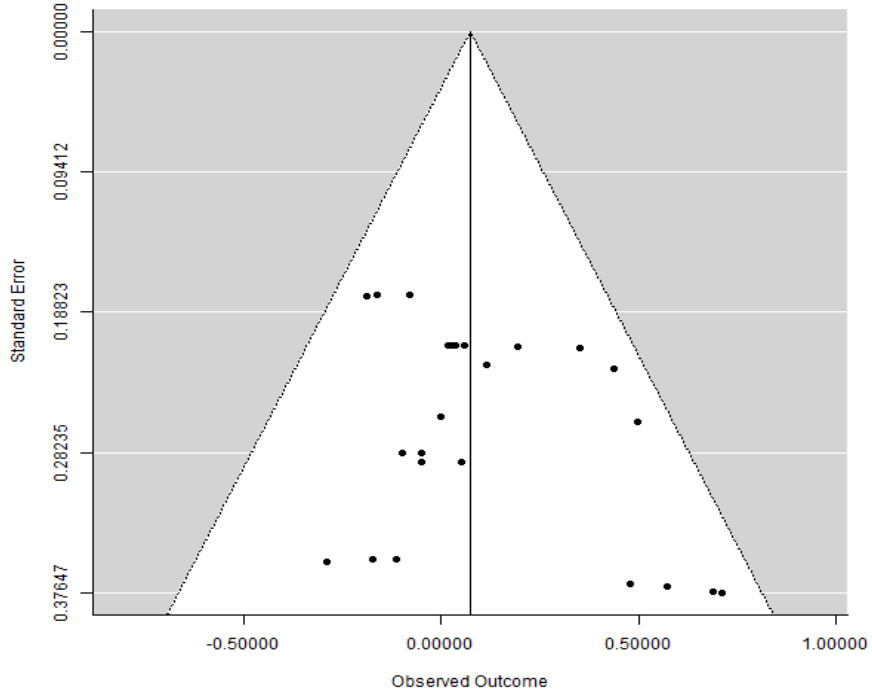

Fig. S8. Funnel plots of the impact of yeast based diets on eggshell thickness in laying chickens

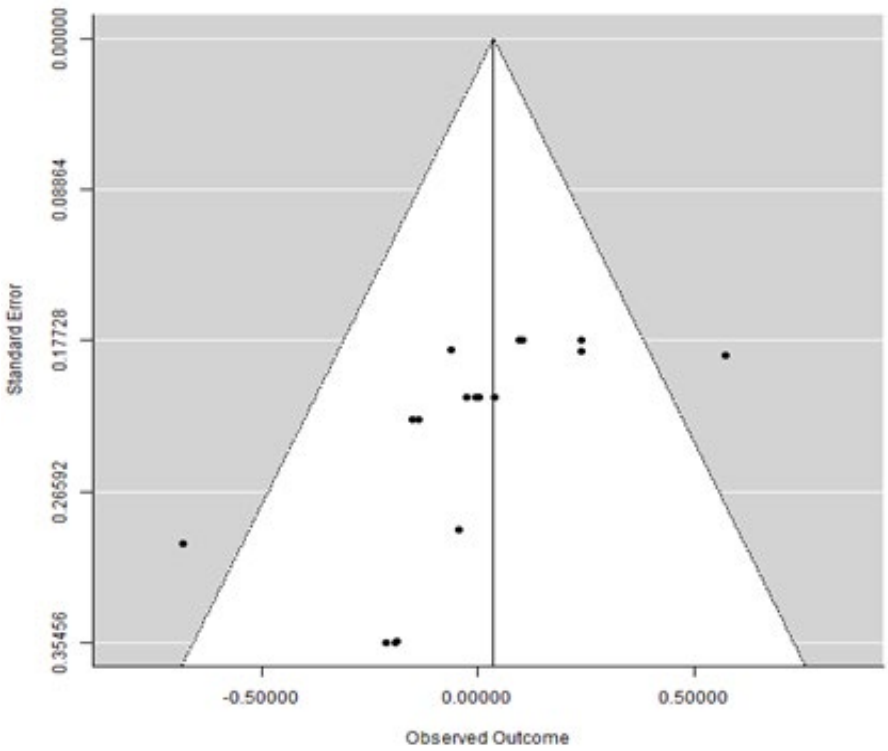

Fig. S9. Funnel plots of the effect of yeast based diets on HU in laying hens

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