Influence of main cereal and feed form of the diet on performance and digestive tract traits of brown-egg laying pullets from hatching to 17 weeks of age

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Introduction

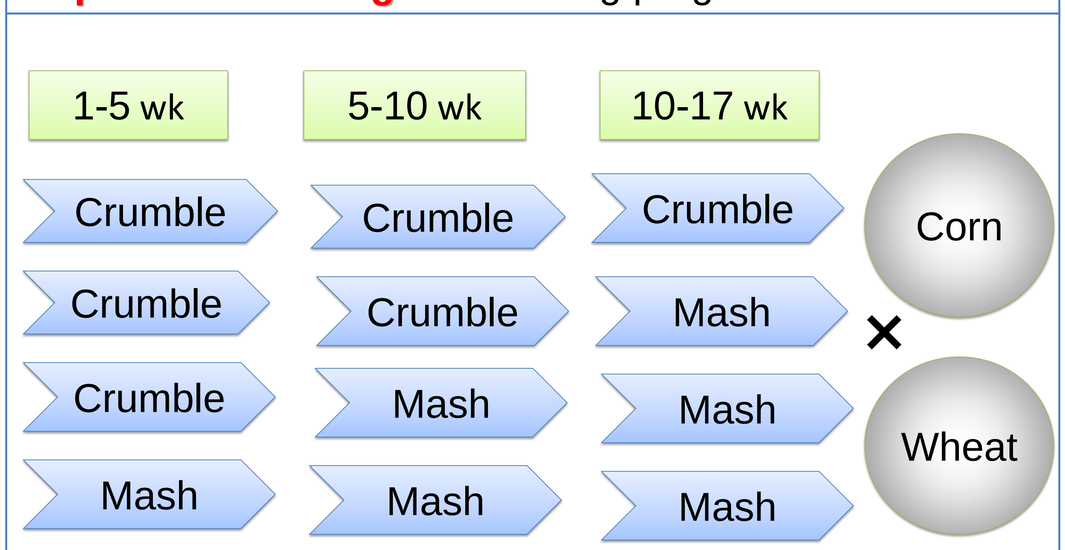
❖Dented corn (Zea mays L.) and soft wheat (Triticum aestivum L.) are the most common cereals used in poultry diets.
❖Feeding crumbles to broilers improved growth performance.
❖The authors had not found any report on the effects of alternating feed form during the rearing phase on performance and GIT traits of brown-egg laying pullets from hatching to 17 wk of age.

Objectives

Evaluate :
➢The influence of the main cereal of the diet on productive performance and development of the GIT of pullets from 0 to 17 wk of age.
➢ The effects of feeding crumbles for different periods of time, followed by feeding mash to 17 of age, on performance, GIT development, and body measurements of brown-egg laying pullets.

Materials and methods

Experimental design : 4 feeding programs × 2 cereals



✓Nine replicates (17 pullets)/ treatment

Ingredient composition and calculated nutritive value of diets (% as fed basis)

Ingredient	1-5 wk		5-10 wk		10-17 wk	
	Corn	Wheat	Corn	Wheat	Corn	Wheat
Corn	40.0	-	40.0	-	40.0	-
Wheat	-	40.0	-	40.0	-	40.0
Soybean meal (46%)	34.2	31.7	18.5	15.6	12.3	9.3
Barley	13.0	17.0	24.1	27.0	20.0	22.8
Wheat middlings	-	-	-	-	12.0	12.0
Sunflower meal (28%)	5.97	4.54	12.70	12.80	11.52	11.64
Soybean oil	2.71	2.92	1.00	0.90	1.00	1.00
Others[1]	4.12	3.84	3.70	3.70	3.18	3.26
Calculated analisis						
EMAn (Kcal/kg)	2.790	2.790	2.700	2.700	2.650	2.650
Crude protein	21.5	21.8	18.0	18.0	16.0	16.0
Lys	1.10	1.10	0.95	0.95	0.72	0.72

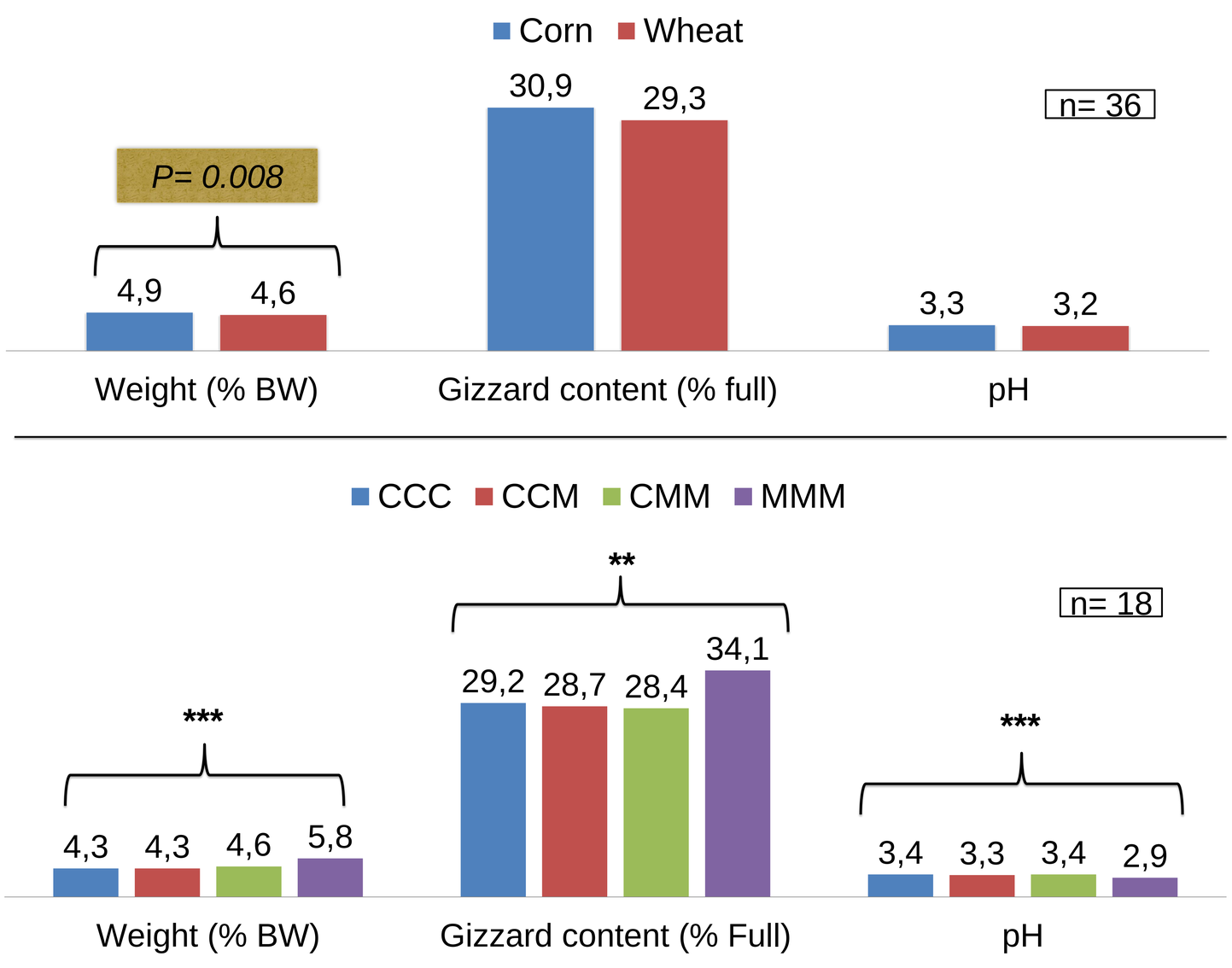
[1]Includes AA, minerals, and premix

Result

Influence of main cereal and feed form of the diet on growth performance and digestive tract traits of brown-egg pullets from 1 to 5 wk of age

				ADFI (g)	ADG (g)	FCR (g/g)
Cereal						
Corn				19.3	8.77[b]	2.21[a]
Wheat				19.2	9.20[a]	2.09[b]
Feed form						
	Period, wk					
	0-5	5-10	10-17			
	C[1]	C	C	19.1[b]	9.18[a]	2.09[b]
	C	C	M	18.9[b]	9.12[a]	2.08[b]
	C	M	M	18.8[b]	9.19[a]	2.05[b]
	M[2]	M	M	20.2[a]	8.46[b]	2.39[a]
SD				0.55	0.293	0.089
Cereal				NS	***	***
Feed form				***	***	***

[1]C=crumble; [2]M=mash



Conclusion

❖ Wheat supplemented with enzymes can be used successfully as a substitute of corn in diets for pullets from 1 to 17 wk of age
❖ Pullets fed corn had heavier GIT and gizzard than pullets fed wheat from 0 to 17 wk of age
❖ Feeding crumbles continuously improved growth performance of the pullets at 17 wk of age but hindered GIT development
❖ The GIT of the pullets adapts quickly to changes in feed form