

Camelina Seed and Its Effect on Avian Wildlife Species

Mentnech, K. J.; Delfelder, C. J.; Seitz, D. E.; and Beyer, R.S.



Department of Animal Sciences and Industry, Kansas State University, Manhattan

Introduction

- In Western Kansas, as water availability decreases, agriculture producers are looking for alternative crops that use less water.
- Also in western Kansas is our important game bird recreation area.
- And when we use Camelina (*Camelina sativa* L. Crantz) seed, due to early harvest, we are interested in what effect these little seeds have on early growth of birds since they will hatch in early spring right at Camelina seed harvest.

Objective

To determine if whole Camelina seed and ground Camelina seed fed in 5% and 10% inclusion rates would effect the growth performance of broiler chicks.

Photo Camelina Sativa field



Photo Camelina Sativa Seed



Photo Weighing Chicks



Diets

Ingredient	Control	5% Camelina	10% Camelina
Corn, ground	49.7	47.8	45.9
SBM (48%)	39.6	67.4	35
Soy oil	6.3	5.6	4.9
Limestone	1.7	1.7	1.7
Phos/Cal (<21%)	1.5	1.5	1.5
Salt	0.46	0.46	0.46
NB 3000	0.25	0.28	0.28
Methionine	0.18	0.15	0.13
Camelina	0	5	10
Calculate Analysis			
Metabolic Energy (kcal/lb)	1454	1454	1454
Protein	23	23	23
Methionine	0.6	0.6	0.6
Lysine	1.3	1.3	1.3
Ca	1	1	1
Phosphorus (Avail)	0.45	0.45	0.45

Procedures

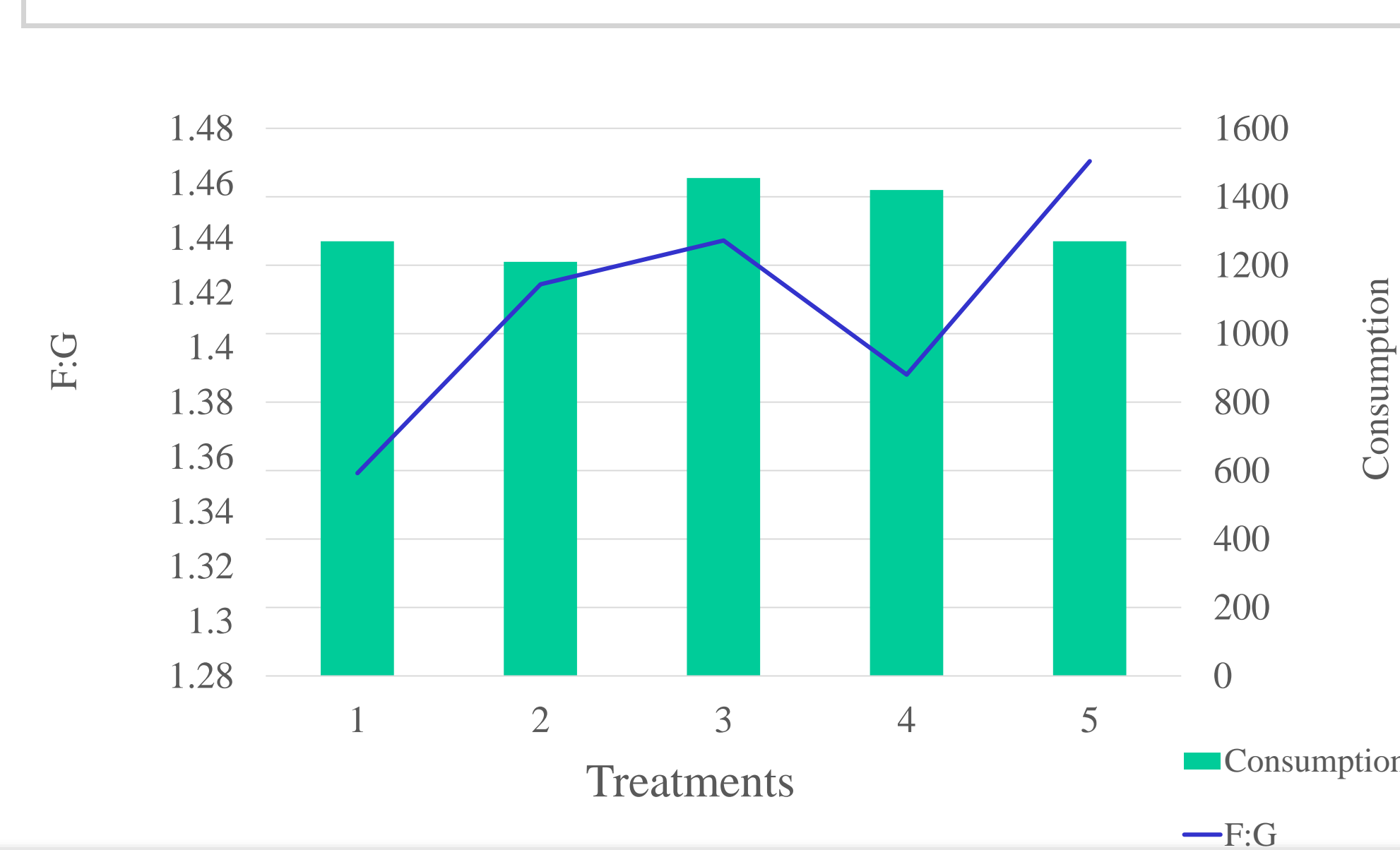
- 45 broiler chicks (Cobb 500) at two weeks of age were allotted to battery cages (3 birds/cage, 3 cages/ treatment) for an 7-d growth experiment.
- Chicks were arranged in a completely randomized design to 15 battery cages in five different feed treatments (control; 5% inclusion rate of whole Camelina seed; 10% inclusion rate of whole Camelina seed; 5% inclusion rate of ground Camelina seed; and 10% inclusion rate of ground Camelina seed).
- Birds were weighed and each feed treatment were weighed on d 0 and d 7 to determine initial chick weight, final chick weight, gain in chick weight, consumption of treatment diet, feed:gain, and gain:feed.
- There were no mortality throughout the experiment.
- Data were analyzed with the GLM procedure of SAS 9.4 with the main effects of initial chick weight, final chick weight, gain in chick weight, consumption of treatment diet, feed:gain, and gain:feed, Battery cage was the experimental unit.
- Pre-planned statements were analyzed for the treatments.

Results

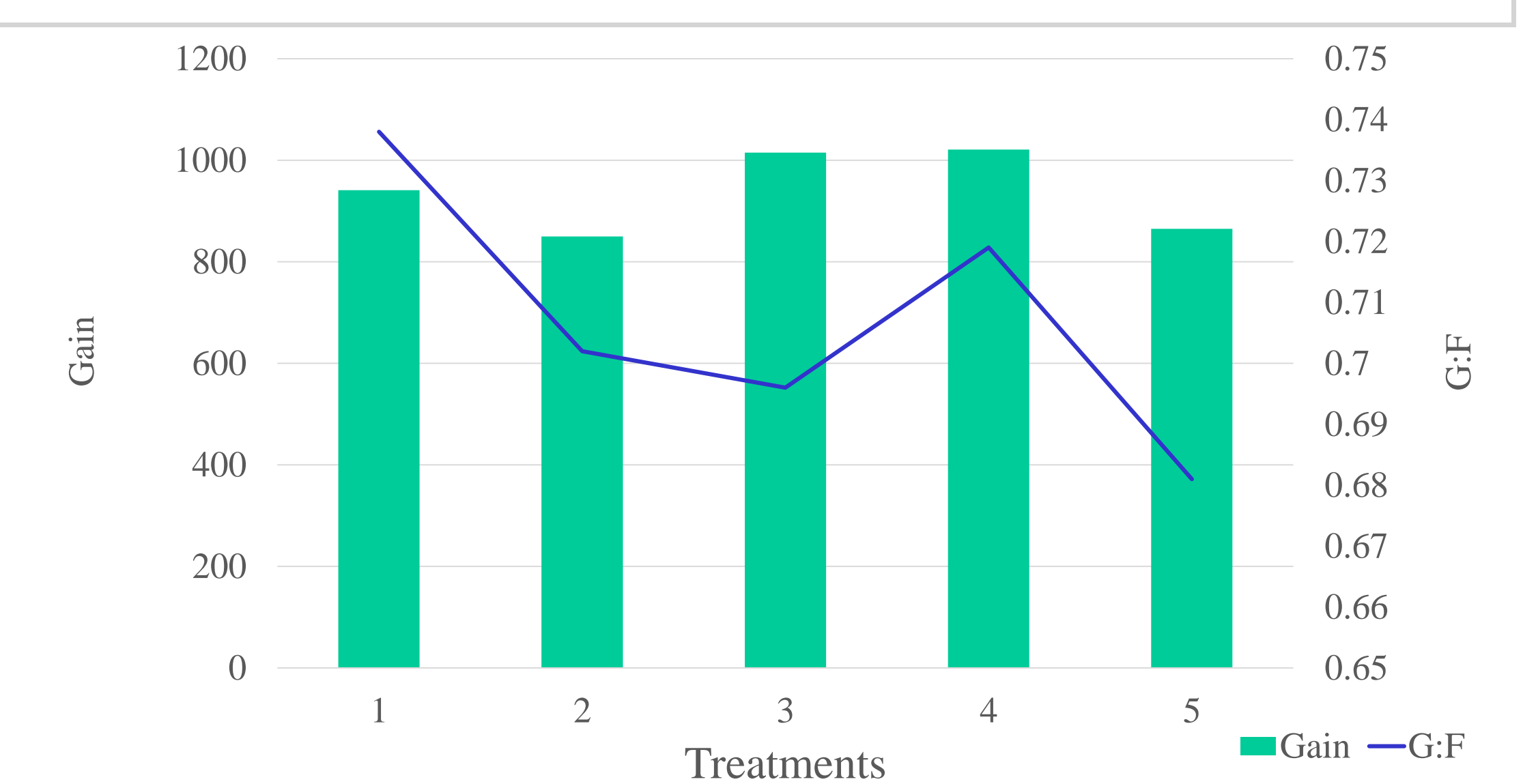
Effects of Camelina Seed Inclusion on Broiler Chick Performance

	Treatments					Variance	P Value
	1	2	3	4	5		
Initial Weight (g)	864	864	815	869	865	0.2179	0.0032
Final Weight (g)	1805	1690	1890	1890	1730	0.3552	0.1271
Gain (g)	941	850	1015	1021	865	0.3478	0.0175
Consumption (g)	1270	1210	1455	1420	1270	0.323	0.0066
F:G	1.354	1.423	1.439	1.390	1.468	0.2634	0.0025
G:F	0.738	0.702	0.696	0.719	0.681	0.204	0.0025

Growth Performance of Chicks



Feed Intake of Chicks



Conclusions

As a result of the study there were no statistical differences between the treatments, respectively.

In conclusion, the results indicate that Camelina seed, whether whole or ground, will not pose a threat to game bird health in wildlife recreation areas nearby agriculture producers.