



Cooperative Extension Service
Institute of Food and Agricultural Sciences

Poultry Diets for Small Flocks¹

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The feed formulations in Tables 1a and 1b are designed for the flock owner who may wish to home-mix feeds or have them custom-blended for their birds. They also allow the incorporation of corn from sustainable agriculture or organic programs. These formulations are based on nutrient requirement recommendations and ingredient nutrient analyses of the National Research Council. (National Research Council, 1994. *Nutrient Requirements of Poultry* 9th Rev. Ed. National Academy Press, Washington, D.C., 156 pp.) These diets are designed to be fed in mash form, and they meet all the nutritional needs of the various species of birds. It is not necessary to provide any supplements, such as oyster shell or grit. The feed should not be diluted with scratch feed or other grains.

No duck or turkey breeder feeds are shown because their nutritional requirements are very similar to those of the laying chicken. Therefore, it is recommended that the chicken layer formulation be employed for these birds. A continuous supply of feed and fresh, clean water should be available to the birds at all times.

In order to accommodate different mixing capabilities, formulations with and without vegetable oil (such as peanut or corn oil) used as an energy source are included.

The use of the lower energy diets will result in a somewhat longer growing period and reduced feed efficiency. We also recommend that a feed additive to prevent coccidiosis (caused by a protozoan parasite that invades the walls of the intestine) be added to feeds for starting and growing chickens and turkeys. Since quail also have a problem with ulcerative enteritis, an inflammation of the intestine sometimes resulting in high mortality, a feed additive to control this condition is also recommended. A small portion of the corn can be removed to accommodate medication addition. As with any medication, directions concerning approved bird age, dosage concentration, duration of feeding, and withdrawal time should be carefully studied and followed.

Supplemental vitamin and trace mineral activities for the microingredient mix are also recommended in the footnotes of each table.

For further information on poultry, contact your local county extension agent.

1. This document was published April 1995 as SS-PSE-6, one of a series of the Department of Dairy and Poultry Sciences, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Reprinted October 1996. Reviewed April, 1999. Please visit the EDIS Web site at <http://edis.ifas.ufl.edu>.
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Table 1a. Feed formulas for small poultry flocks.

	Pullet Starter (chicken)	Pullet Grower (chicken)	Pullet Developer (chicken)	Egg Layer (chicken)	Broiler Starter with oil	Broiler Starter without oil	Broiler Gro-Fin with oil	Broiler Gro-Fin without oil
	0-6	7-12	13-18	Mature	0-4	0-4	5-8	5-8
Age in Weeks								
PERCENT								
Yellow corn	71.61	77.10	79.71	71.40	52.81	58.75	65.83	69.44
Soybean meal (48.5%)	24.55	19.48	16.96	18.33	37.95	36.91	27.58	26.95
Ground limestone	1.24	1.26	1.42	8.00	1.32	1.46	1.33	1.60
Dicalcium P ₄ (18% P-22% Ca)	1.77	1.33	1.08	1.10	1.75	1.74	1.17	1.16
Microingredients ¹	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Salt	0.33	0.33	0.33	0.60	0.46	0.46	0.31	0.31
DL-Methionine	-----	-----	-----	0.07	0.18	0.18	0.05	0.05
Vegetable oil	-----	-----	-----	-----	5.03	-----	3.23	-----
L-Lysine	-----	-----	-----	-----	-----	-----	-----	-----
CALCULATED ANALYSIS								
Protein	18.00	16.00	15.00	15.00	23.00	23.00	19.00	19.00
Calcium	0.94	0.84	0.84	3.35	1.00	1.05	0.85	0.95
Nonphosphate phosphorus ²	0.44	0.35	0.30	0.30	0.45	0.45	0.33	0.33
Methionine	0.31	0.27	0.26	0.32	0.53	0.53	0.35	0.35
Methionine plus cystine	0.61	0.55	0.52	0.58	0.90	0.90	0.67	0.67
Lysine	0.91	0.78	0.71	0.73	1.26	1.25	0.99	0.98
Tryptophan	0.22	0.19	0.17	0.18	0.31	0.31	0.24	0.24
Metabolizable energy (Kcal/lb)	1362	1389	1401	1291	1454	1306	1454	1356
Sodium	0.15	0.15	0.15	0.25	0.20	0.20	0.14	0.14
Chloride	0.24	0.24	0.24	0.39	0.32	0.32	0.23	0.23

¹Suggested vitamin and mineral activities per pound of finished feed: vitamin A, 3,000 IU; vitamin D₃, 1,000 ICU; vitamin E, 5 IU; menadione dimethylpyrimidinol bisulfite, 1 mg; riboflavin, 2 mg; pantothenic acid, 6 mg; niacin, 27.1 mg; choline chloride, 454 mg; vitamin B₁₂, 1.1 mcg; biotin, 0.05 mg; ethoxyquin, 0.0125%; manganese, 27.3 mg; iron, 22.7 mg; copper, 2.7 mg; cobalt, 0.09 mg; iodine, 0.5 mg; zinc, 27.3 mg.

²Nonplant sources of phosphorus.

Table 1b. Feed formulas for small poultry flocks. — continued

Age in Weeks	Turkey Starter with oil	Turkey Starter without oil	Turkey Grower with oil	Turkey Grower without oil	Turkey Finisher with oil	Turkey Finisher without oil	Quail Starter	Quail Gro-Fin	Quail Breeder	Duck Starter	Duck Grower
	0-7	0-7	8-14	8-14	15-market	15-market	0-6	7-market	Mature	0-3	4-8
PERCENT											
Yellow corn	48.09	46.91	64.43	64.66	78.69	80.17	52.42	64.69	59.95	62.28	77.52
Soybean meal (48.5%)	46.94	48.24	31.85	31.81	17.14	16.88	44.17	29.24	30.73	34.38	19.38
Ground limestone	1.10	1.36	0.97	1.10	0.79	1.06	0.70	1.15	6.24	0.97	1.18
Dicalcium PO ₄ (18% P-22% Ca)	2.48	2.47	1.50	1.50	1.08	1.06	1.68	0.98	2.25	1.48	1.05
Microingredients ¹	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Salt	0.36	0.36	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33
DL-Methionine	0.18	0.16	0.05	0.05	-----	-----	0.20	0.11	-----	0.06	0.04
Vegetable oil	0.30	-----	0.32	0.05	1.47	-----	----	----	----	----	----
L-Lysine	0.05	-----	0.05	-----	-----	-----	----	----	----	----	----
CALCULATED ANALYSIS											
Protein	27.00	27.48	21.00	21.00	15.00	15.00	26.00	20.00	20.00	22.0	16.00
Calcium	1.10	1.20	0.80	0.85	0.60	0.70	0.77	0.75	2.96	0.80	0.75
Nonphytate phosphorus ²	0.60	0.60	0.40	0.40	0.30	0.30	0.45	0.30	0.53	0.40	0.30
Methionine	0.58	0.57	0.38	0.38	0.26	0.26	0.59	0.42	0.31	0.40	0.30
Methionine plus cystine	1.00	1.00	0.76	0.73	0.52	0.52	1.00	0.75	0.64	0.76	0.58
Lysine	1.55	1.55	1.15	1.15	0.71	0.71	1.44	1.04	1.06	1.18	0.77
Tryptophan	0.37	0.39	0.27	0.27	0.17	0.17	0.36	0.26	0.26	0.29	0.19
Metabolizable energy (Kcal/lb)	1270	1251	1350	1338	1454	1407	1292	1357	1285	1330	1395
Sodium	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Chloride	0.26	0.26	0.25	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24

¹Suggested vitamin and mineral activities per pound of finished feed: vitamin A, 3,000 IU; vitamin D3, 1,000 IU; vitamin E, 5 IU; menadione dimethylpyrimidinol bisulfite, 1 mg; riboflavin, 2 mg; pantothenic acid, 6 mg; niacin, 27.1 mg; choline chloride, 454 mg; vitamin B₁₂, 1.1 mcg; biotin, 0.05 mg; ethoxyquin, 0.0125%; manganese, 27.3 mg; iron, 22.7 mg; copper, 2.7 mg; cobalt, 0.09 mg; iodine, 0.5 mg; zinc, 27.3 mg.

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