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Wm. A. Schoenfeld, Director
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WAR EMERGENCY MASH RATIONS FOR POULTRY

by

J. A. Harper, Research Assistant in Poultry Husbandry

The United States Department of Agriculture has requested large national increases in the production of poultry meats and eggs to help meet the increased food demands of military, civilian and allied populations. During 1943 poultry producers are asked to supplement the meat supply by producing 4,000,000,000 pounds of chicken, 4,780,000,000 dozen eggs and 560,000,000 pounds of turkey. This is 28 percent more chicken, 3 percent more eggs and 15 percent more turkey meat than the estimated production in 1942.

Realization that favorable prices are the greatest stimulus to increased production has brought about government support of poultry meat and egg prices.

Poultrymen are facing these higher production demands despite the extreme shortages of many accepted ingredients used in chicken and turkey mashes. Frequent changes in formulas of poultry rations may be necessary. The tabulated suggestions in this bulletin give war emergency mash formulas which may serve as reference material for making emergency adjustments of normally used formulas.

The most difficult problem encountered is the shortage of the animal proteins such as meat, fish and milk products. It now becomes necessary to replace much of these animal protein sources with vegetable proteins from soybean oil meal, peanut meal, linseed meal and cottonseed meal. The amount of vegetable protein replacement varies with the purpose of the ration. Protein demands for body growth differ from those of production for laying or breeder hens. Likewise, growth demands for protein by chicks differ in amount from that required by poults.

Animal protein supplements normally supply a considerable quantity of the minerals and riboflavin in a ration. Vegetable proteins by comparison supply but little of either. Therefore, when soybean oil meal is liberally used in a ration to partially replace animal proteins the resultant calcium and phosphorus deficiencies should be corrected by adding about 10 pounds of bone meal for each 100 pounds of soybean oil meal used. When minerals are supplied in quantities similar to the amounts carried in the suggested mash formulas it is not necessary to feed additional mineral supplements, although growing, laying and breeding fowls should be allowed free access to oyster shell or soluble grits. The use of whey, yeast, distillers' dried solubles, yeast-molasses residues, greens and similar products will aid in bringing the riboflavin requirements of a ration into balance. The poundage of any of these ingredients used is based upon its guaranteed riboflavin content.

The amounts of the animal protein concentrates in the suggested mash rations have been reduced to the minimum. Present information does not justify a complete substitution of animal proteins with plant proteins. Those in a position to include greater amount of any one or all of the animal protein concentrates will improve the rations by doing so.

War Emergency Mash Rations

Ingredient	Chick Mash	Developing Mash	Broiler Mash	Laying Mash	Breeder Mash	Poult Mash	Turkey Developer	Turkey Breeder
Mill run	100	260		270			200	200
Bran	100		160		250	280	110	110
Ground yellow corn	400	400	400	400	400	300	300	300
" wheat	400	400	300	300	300	200	200	300
" oats	100	200	200	200	200	100	200	200
" barley	100	100	100	100	100	100	100	100
Soybean oil meal (44%)	350	250	400	350	260	500	400	260
Fish meal (55%)	20		30		40	40		40
Meat meal (45%)	20	70	20	80	60	20	70	40
Dried skimmilk (35%)	40	20	20	20	20	40	20	20
Dried whey (12.5%)	40	20	40		40	40	20	40
Distillers' Dried Solubles ^{1/}	80	40	80	40	80	80	80	80
Yeast-Molasses residue ^{2/}	(8)	(4)	(8)	(4)	(8)	(8)	(8)	(8)
Live yeast ^{3/}	10(18)	(4)	10(18)	(4)	10(18)	(8)	(8)	10(18)
Alfalfa leaf meal (18%)	150	150	150	150	150	200	200	200
Steamed bone meal	30	30	30	30	30	40	40	40
Oyster shell flour	40	40	40	40	40	40	40	40
Salt	20	20	20	20	20	20	20	20
Vitamin-bearing oil (4000A-800D)*	3.3	4.4	3.3	4.4	6.6	4.4	6.6	6.6
Manganese sulphate	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
Total Pounds	2003.3	2004.4	2003.3	2004.4	2006.6	2004.4	2006.6	2006.6

(These mashes when fed with normal complements of scratch grain comply with February 1943 request of the Office War Information for national conservation of animal protein concentrates.)

Average Chemical and Vitamin Analysis

	Percent	18.52	16.85	19.16	18.59	18.04	21.87	20.01	18.20
Protein		18.52	16.85	19.16	18.59	18.04	21.87	20.01	18.20
Fat	"	3.77	3.85	4.02	4.28	4.27	3.93	4.50	4.30
Fiber	"	5.07	5.37	5.58	5.57	5.62	6.02	6.23	5.98
Nitrogen free extract	"	52.91	53.70	51.47	51.14	51.81	47.46	48.87	51.37
Calcium	"	1.682	1.804	1.640	1.842	1.880	1.957	2.046	2.093
Phosphorus	"	.830	.846	1.032	.839	.811	.997	1.011	1.047
Vitamin A U.S.P. units/lb.		8132	8972	8132	8972	11,128	10,472	12,469	12,469
Vitamin D A.O.A.C. units/lb.		599	799	599	799	1,198	799	1,198	1,198
Riboflavin micrograms /lb.		2555	1583	2493	1561	2,503	2,293	2,056	2,676

Figures in parenthesis indicate possible substitutions for riboflavin of distillers' dried solubles.

^{1/} 11,350 units. ^{2/} 113,500 units. ^{3/} 109,388 micrograms riboflavin per pound based on product used here. Use a cereal grain or grain by-product and plant or animal protein supplement to make up weight and protein differences.

* Other vitamin-bearing products according to W.P.B. vitamin limitation order.