Potatoes for Poultry

value of dried potatoes as feed for chicks and poults investigated

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Under normal economic conditions it probably is not feasible to consider potatoes as a feedstuff for poultry.

At the present time surplus potatoes for feeding purposes may be obtained at a very low cost, and the question of their feeding value for poultry has been asked many times.

Cooked potatoes are used as a feed for chickens in Europe, often as the principal carbohydrate source in the ration. There has been little work reported in which potatoes have been fed to turkeys.

An experiment was conducted at Davis with both turkeys and chickens in which comparisons were made of the growth and feed efficiency of rations containing potatoes prepared in various ways.

Four procedures were used for preparing the potatoes. By the first method whole potatoes were ground in a food chopper and spread on trays to dry in the sun. By the second method the potatoes were ground in a food chopper and dried in an oven at 50° C. The third procedure was similar to the second except that the drying temperature was increased to 85° C. The last method used was to boil the potatoes in water heated by steam followed by sun-drying.

The sun-dried preparations were found to contain from 8.1% to 10.3% moisture, while oven-dried samples ranged from 5.6% to 9.4% moisture. The crude protein in the dried samples varied from 8.3% to 10.0%.

The basal ration contained the following—in pounds per 100 pounds; soybean oil meal, 21.0; fishmeal, 5.0; dried whey, 3.0; alfalfa meal, 5.0; salt, 1.0; bone meal, 2.5; ground limestone, 2.0; wheat bran, 10.0; ground barley, 9.5; butyl fermentation product, 0.5; fish oil—1000A–400A–0.5; and manganese sulfate, 0.0125. The potato preparations were fed at either 20% or 40%, and the remainder of the ration was supplied by equal parts of ground wheat and corn. The complete rations varied in crude protein from 20.2% to 22.7%.

Bronze turkey poults which were 47 days of age were divided into comparable groups of 12 birds each and were fed the experimental rations for 22 days. Single Comb White Leghorn cockerels 61 days of age were randomly divided into groups of 12 each and were fed the same rations as the poults for 20 days. The results of these tests are shown in the table.

A reduction in growth of both poults and chicks was apparent when sun-dried potatoes were fed at 20% and was even greater at 40%. Oven-dried potatoes were approximately the same as sun-dried potatoes in their effect on growth. The group fed 40% potatoes which were cooked before sun-drying grew better than the group receiving 20% of sun-dried potatoes but did not grow as rapidly as the control group. The efficiency of feed utilization was decreased in groups in which the weight gains of the birds were reduced.

The experiments indicate that raw potatoes, when sun-dried or oven-dried, are not a satisfactory feedstuff for growing turkeys or chickens.

Although dried cooked potatoes caused a slight reduction in growth and feed efficiency of poults when fed at 40% of the ration, it is likely that they can be fed at the 20% level which, according to reports from other experiment stations, has proven satisfactory with chickens.

Unless an inexpensive method of cooking and drying potatoes becomes available, it is unlikely that potatoes will ever become a popular feedstuff for poultry.

Gains and Feed Efficiency of Poults and Chicks Fed Rations Containing Potatoes Treated in Various Ways

Group	Potato supplement	Level %	Poults		Chickens	
			Av. 22 day gain (gms)	Gain per feed consumed	Av. 20 day gain (gms)	Gain per feed consumed
1	None		1096	0.40	447	0.23
2	Sun-dried	20	859	0.31	383	0.19
3	Sun-dried	40	687	0.23	360	0.15
4	Oven-dried, 50° C	40	687	0.22	...	...
5	Oven-dried, 85° C	40	588	0.20	364	0.15
6	Cooked, sun-dried	40	915	0.31	...	...

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Continued from page 3

insect vector. After inoculation the plants were transplanted to an isolated block in the field along with a number of Common plants inoculated at the same time.

At the end of the second season of growth all of the latter were either dead or showed severe dwarfing, whereas about 65 of the selections showed no effect of the virus with the exception of root symptoms. Based upon these results and those of the above-mentioned field plots the more resistant selections were saved to cross pollinate naturally and set seed.

Since dwarf is the main factor responsible for short-lived alfalfa stands in certain areas of the state, particularly in southern California, the seed from the selections was released to the Agricultural Extension Service in Riverside County in the fall of 1948. It was planted in an isolated area to be used as the foundation for seed increase of dwarf resistant alfalfa. Further field tests with seed from this planting will be made this year.

This improved selection is to be called *California Common 49* and seed will be produced under the regulation of the California Crop Improvement Association. Seed of this selection to be used in commercial alfalfa hay production will be allocated only to those areas where dwarf is the primary cause of rapid loss of stands.

The best of the original dwarf-resistant selections will be used in the alfalfa breeding program now under way at the Experiment Station at Davis to transfer dwarf resistance into the bacterial wilt-resistant variety which will soon be released. Until resistance to both these diseases is incorporated into one variety each selection will be used in the appropriate area of the state depending upon the relative severity of each disease in that area.

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