AGRICULTURAL EXPERIMENT STATION
OREGON STATE AGRICULTURAL COLLEGE

J. T. Jardine, Director

Corvallis

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RAISING TURKEYS UNDER SEMI-CONFINEMENT

By

H. K. Dean, Farm Superintendent
Umatilla Field Station

Disease control in turkeys is very largely dependent on raising the birds on clean ground. The turkey growing industry of the United States has moved from the east to the west largely on account of losses from disease sustained by the growers, when their soils became contaminated with disease. The industry in the west has been successful primarily because it has been conducted on clean ground. If it is to continue so, steps must be taken to prevent disease.

Experiments were undertaken in 1930 to prevent disease by growing turkeys under confinement on clean ground during their entire lives. The birds were purchased as day-old poults and brooded in a well-ventilated, 12 x 12 house using a commercial chick brooder. As soon as they were large enough to be out of the brooder, they were allowed access to young, tender alfalfa pasture and were kept on it until the alfalfa growth ceased in the fall. The lot fences were moved five times during the season and when a piece of ground had been once used it was not used again. At first the lots were relatively small and the size increased as the birds required more feed. During the whole season, the turkeys had access to 1.12 acres of land. From this field, hay was cut before and after the turkeys had used it. It is estimated that the field would have yielded at the rate of four tons per acre while the hay secured was 2.38 tons per acre so the birds were charged with the balance 1.83 tons for the 1.12 acres. Using the field for turkey pasture apparently was not detrimental to the stand of alfalfa, although it was rather closely cropped at times. It was found that the highest percentage of consumption and the lowest waste from tramping was secured when the alfalfa was allowed to grow to around a foot in height before being used. After the alfalfa growing season is over any convenient clean ground will serve.

The birds were confined with a six-foot poultry fence, and very little trouble was encountered from their flying over. The steel posts used were found very convenient when moving to a new area.

Two hundred fifty day-old poults were purchased for one delivery date. Two hundred and sixty-five poults were received

as follows: April 22, 133; April 24, 32; and May 6, 100; 15 extras being sent as a partial adjustment. It was quite evident that the 32 birds were hatched late from the original setting, many having been picked out of the shell. Many of the birds, especially in the second lot, were so weak when received, largely from improper incubation and hatching, that they had little chance to live. Of these weak birds, one was received dead and 28 died during the first two weeks and five other weak birds subsequently. The other losses to maturity were paralysis or leg weakness 4, accidents 2, indigestion 2, black head 6, and unknown causes 2, leaving 215 birds which were marketed. We are not able to account for the loss of 2 birds from black head while they were on alfalfa. The other 4 undoubtedly contracted the disease while on ground for a short time in the fall to which chicken manure had been applied and plowed under the previous spring prior to growing cultivated garden crops during the summer. These disease losses serve to emphasize the extreme importance of avoiding contamination of any sort. There was no evidence throughout the entire season of any other disease in the flock.

Raising the birds under semi-confinement did not have a detrimental effect on the quality or weights. The station flock grown in limited quarters had 71.2% prime birds; while the local flocks, a greater proportion of which were given free range, shipped through the Hermiston Association had 52.5% prime birds. The average dressed weight of the station toms was 20.8 pounds and hens 12.2 pounds while all the association toms averaged 16.4 pounds and the hens 10.5 pounds.

Growing under confinement apparently did not greatly advance maturity. No birds were sold on the November market on account of lack of development of pin feathers and not having the desired flesh finish. For the December market, 37% of the toms and 69% of the hens were ready, and the balance of the birds were ready for the January market.

It is believed that too much stress has been placed by growers generally upon the importance of having high percentages of birds ready for the earlier markets. A bird must be grown before it will put on finish desired by the consumer and only the earliest hatched poults will reach maturity and finish for the early markets. If the growers would be content to feed well and let the birds reach maturity and prime condition before they kill, they would realize more profit than selling on an early market in poor condition. Birds are frequently sold too soon because the grower is not properly financed to carry them until they will command the best prices. It is a mistake to attempt to raise more birds than a grower is in position to finance to maturity, both from the view point of his own profit and the detrimental effect of poorly finished birds on the market. While the cost figures per pound show an increase as the season advanced, the increase was not great and more than offset the loss which would have resulted from early selling of underfinished birds.

COSTS

Records were kept of the feed and other costs. As calculated

here, they are per pound live weight. The turkeys used in this experiment cost, for feed, at the end of the growing period when they were taken off of alfalfa on September 20, 9.4¢ per pound. The finishing period was divided into three parts to correspond to the usual dates of killing for the various markets. On November 17, the feed cost was 11.2¢; on December 4, 11.7¢; and on January 12, 13.6¢ per pound. The overhead cost, which included the original outlay for stock, the brooder fuel, and 10% of the investment in equipment, amounted to 4.9¢ per pound. The labor spent in care of the flock for the whole season was 578 hours.

Cash Costs for Overhead and Feed During Growing and Finishing Periods Based on Liveweight

Umatilla Experiment Station - 1930

	Mash	Scratch	Minerals	Alfalfa	Feed Costs	Cumulated Feed Cost Per Lb.
Growing Period - 4/22 to 9/20	$143.33	$45.69	$11.65	$18.30	$218.97	9.4¢
Finishing Period - 9/20 to 11/17	72.80	74.03	3.80	-----	150.63	11.2¢
Finishing Period - 11/17 to 12/4	9.52	43.62	2.90	-----	55.04	11.7¢
Finishing Period - 12/4 to 1/13	18.49	20.28	.95	-----	39.72	13.6¢

Pounds Feed Used by Periods

	Mash	Scratch	Grit	Charcoal	Oyster Shell	Bone Meal	Alfalfa
Growing Period 4/22 to 9/20	5300	1900	400	250	100	85	3660
Finishing Period 9/20 to 11/17	3000	4082	200	100	T o t a l	T o t a l	----
Finishing Period 11/17 to 12/4	400	2550	100	100			----
Finishing Period 12/4 to 1/13	800	1300	50	50			----

Overhead Costs

Stock 250 poults @ 65¢	$162.50
Brooder fuel	13.20
10% of equipment cost	18.04
	$193.74 -- 4.87¢ per pound.

Financial Summary

Sales - 105 Toms total	$668.31	- Average	$6.38
110 Hens total	397.05	- Average	3.61
215 Birds "	1065.36	- Average	4.95

Costs - Total feed cost $464.36
Overhead cost 193.74
Total cash cost $658.10

$1065.36 - $658.10 = $407.26 total labor return on 215 birds or $1.89 labor return per bird.

FEEDS AND FORMULAS USED

A commercial chick mash proved unsatisfactory for turkey growth about the fifth week. Meat and fish meal at the rate of 2 1/2 pounds of each per hundred pounds were added in an effort to get satisfactory results. With these additions it failed to meet growth requirements and was discontinued on July 10.

Ration Used July 10 to September 20, Growing Period.

10 lbs. bran	)
25 lbs. ground yellow corn	)
20 lbs. ground wheat	)
10 lbs. ground whole oats	)
10 lbs. ground barley	)
5 lbs. meat scraps	) With scratch twice daily
5 lbs. fish meal	)
6 lbs. powdered milk	)
4 lbs. steam bone meal	)
2 lbs. linseed oil meal	)
2 lbs. oyster shell flour	)
1 lb. fine salt	)
100 lbs.	

Feeding Schedule April 22 to September 20

Age	Scratch	Mash	Drink	Other
To 48 Hrs.	None	None	None	None
First Feed to end of week	Add light scratch to last feed of 5th day. Objects first week - teach how to eat and source of heat	5 30-minute feeds daily. 4 30-minute eggs to commercial chick mash - crumbly. Add 2 to 3 oz. grit	Water Warm	Add cut gree. feed after 3 days. Outside if weather permits by end of week
Second Week	One scratch feed daily	Eliminate eggs. Leave dry mash before poults as soon as all eat and know heat.	Same	Outside range every day. Enclosure wind breaks.
Third Week to end of 5 Months	Light scratch A.M. All they will eat at night.	Dry mash all times. Change by 6 weeks to formula given	Water	Supply grit oyster shell, bone and charcoal in hoppers. Alfalfa range, shade and shelter.

Pre-finishing and Finishing Period. September 20 to Final Sale

Mash

50 lbs. ground yellow corn
20 lbs. wheat flour middlings
12 lbs. finely ground oats
5 lbs. meat scraps
2 lbs. linseed meal
5 lbs. alfalfa leaf meal
1 lb. salt
100 lbs.

Hoppers closed 4 weeks before killing.
Moist mash feed after night grain.
3 grain feeds daily.

Pre-finish Scratch

35 lbs. wheat
25 lbs. whole yellow corn
25 lbs. rolled barley
15 lbs. whole oats
100 lbs.

The pre-finish scratch was gradually changed to the following finishing scratch.

50 lbs. whole yellow corn
15 lbs. rolled barley
25 lbs. wheat
10 lbs. oat
100 lbs.

SUMMARY

1. Turkeys should not be raised on soil occupied by poultry or fertilized with poultry manure.

2. It is not necessary to spend money for poulty tonics, worm or cure-all remedies. Prevent trouble by raising on clean soil with well-balanced feeds.

3. Previous opinion has been that any chick starting ration was good enough to raise turkeys. This experiment has demonstrated the average chick mash to be too low in protein for the proper development of young poults.

4. Experimental turkey work is planned for a period of several years for the purpose of seeking information. The birds were raised this first year on a lower protein ration than is generally recommended in order to form a basis for future work.

5. The use of the same land or ditches on the farm for turkey ranges year after year constitute a dangerous hazard.

6. In addition to mash and grain, separate hoppers containing grit, bone meal, oyster shell and charcoal were available on the range at all times. Alfalfa leaf meal was added to the mash after the green alfalfa season was passed.

7. The turkey must be fed properly from its first feed to maturity if it meets the competitive quality supply that today regulates the price received.