

flat for the first three days. For the remainder of the growing period, a hanging tube feeder was used. Each pen contained an automatic water fountain, and infra-red bulbs were used for heat.

All chicks were individually weighed at four and eight weeks of age. Feed consumption was also determined for each feeding period, and feed efficiencies were calculated from these values. The total litter in pens containing citrus pulp was weighed at the beginning and end of the test in order to determine the net gain.

Results and Discussion

Chicks reared on the citrus pulp litter had body weights and feed efficiencies equivalent to chicks reared on the wood shavings (Table 2). The litter in pens containing citrus pulp appeared to be dry and in good condition with little caking or spoilage observed. The weight of citrus pulp litter was almost doubled during the eight week feeding trial with an average of 92 pounds of litter at the end of the test. This represented a gain of 42 pounds during the feeding trial.

Table 2: Body weight and feed efficiency of broilers when reared on two different litters.

Type of Litter	Body Weight		Feed/Gain	
	4 wk.	8 wk.	4 wk.	8 wk.
	(gms)		(lbs)	
Citrus pulp	438	1288	1.63	2.25
Wood shavings	435	1257	1.64	2.22

The results from this test indicate that citrus pulp could be used as a litter for broiler chicks without adversely affecting their performance. Also, visual observations indicated that citrus pulp was a satisfactory material for absorbing the moisture from the droppings.

The litter from the pens containing citrus pulp was saved for use in digestion trials reported in Experiment 3.

EXPERIMENT 2: THE INFLUENCE OF INCORPORATING VARIOUS LEVELS OF CITRUS BY-PRODUCTS INTO BROILER FEEDS

Mehrhof and Rusoff (1939) reported that levels of 10% to 20% of citrus meal in the diet of growing chickens resulted in mortality rates ranging from 15% to 97%. Since it is possible that chicks will eat a considerable amount of litter, it was thought desirable to conduct experiments to determine if the feeding of