

bagasse, wood shavings, rice hulls, ground flax, and clay for use as poultry litter. These workers observed differences in litters in regard to the "caking" in pens. The pens with the clay material had practically no caking, while pens with sugar cane bagasse had a very small amount of caking around the waterers. Oak shavings, ground flax and rice hulls had caking over 50% to 75% of the pen areas. The pens with straw or a mixture of rice hulls plus straw had the caking condition over 75% to 100% of the area. They concluded that straw does not have good physical characteristics for litter; however, it does have good fertilizer value. They further concluded that if litter conditions are considered important then perhaps litters other than straw would serve equally as well. They reported that the cane bagasse had good litter characteristics and was also high in fertilizer value.

The purpose of this study was to explore the possibility of using dried citrus pulp as a litter for poultry houses after which it would be used later for feeding ruminants.

### Experimental Procedure

Citrus pulp was compared to kiln dried wood shavings as a litter for a broiler house. Four pens in a broiler experimental house, each with an area of 25 square feet, were assigned to each litter. The depth of litter in all pens was approximately 2 inches and required approximately 50 pounds of dried citrus pulp in each pen.

Ten male and ten female day-old broiler type chicks were placed in each pen. All chicks were fed a practical type broiler feed which contained 22% protein, 2200 kilocalories of productive energy per kilogram of feed, 1% calcium, and 0.65% phosphorus (Diet 1, Table 1). A small amount of feed was placed on a filler

Table 1: Composition of Diets

Ingredients	Diets	
	1	2
	(lbs/cwt)	
Degerminated corn	56.70	12.74
Soybean meal 50%	34.00	38.50
Alfalfa meal 20%	3.00	3.00
Citrus pulp or citrus seed meal	.....	30.00
Corn oil	2.33	13.00
Ground limestone	1.00	.....
Dicalcium phosphate	1.67	1.46
Iodized salt	0.40	0.40
Micro-ingredients <sup>1</sup>	0.90	0.90

<sup>1</sup>Supplied per kg of diet: 6600 I.U. vitamin A, 2200 I.C.U. vitamin D<sub>3</sub>, 2.2 mg menadione sodium bisulfite, 4.4 mg riboflavin, 13.2 mg pantothenic acid, 500 mg iron, 1.98 mg copper, 200 mcg cobalt, 11 mg iodine, 99 mcg zinc, 56 mg santonin, 22 gms MnSO<sub>4</sub>, 39.6 mg niacin, 500 mg choline Cl, and 22 mg vitamin B<sub>12</sub>.