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ANIMAL FAT IN FEEDS IMPROVES PELLETING EFFICIENCY

Pelleting of animal feeds has become very widely used because this process reduces dust losses and feed wastage; in many cases also, pelleted feeds have been found to give increased gains and feed efficiency. Since animal fats are widely used in many types of high energy livestock feeds it is important to know how this ingredient influences the pelleting process, especially with respect to pelleting cost and pellet durability.

Professor Verl E. Headley and his Associates at Kansas State University, with grant support from FPRF, have investigated recently the influence of animal fat in feed on the pelleting process. For these studies, the researchers used three rations that are considered difficult to pellet - an 18% protein pig starter ration, an 18% protein - 18% fiber cattle ration and a 60% protein - high urea cattle supplement. Stabilized animal fat was added at 0,1%, and 2% to each of the feeds before pelleting. From a total of 90 one-thousand pound pelleting tests the following conclusions were reached:

- 1) Since pelleting efficiency and pellet durability of the fat containing feeds were not affected by production rate, it is advantageous to pellet feeds containing animal fats at maximum production rates.
- 2) The addition of fat to non-urea containing feeds enables one to pellet at a higher temperature as compared to pelleting the same rations without added fat. (Note: This may be quite significant as it relates to the destruction of Salmonella in livestock feeds).

- 3) The pelleting efficiency (kilowatt hours/tons) was improved by the addition of fat to the feeds - a power reduction of 29% for feeds containing 1% fat and 41% for feeds containing 2% fat.
- 4) Pellet durability was reduced 1.2% by the addition of 1% fat and 3% by the addition of 2% fat to the feeds.

These results show that it is advantageous to add animal fats to livestock feeds that are to be pelleted since the fat improves pelleting efficiency and makes possible a higher pelleting temperature. These are "plus" values for animal fats in feeds, values in addition to the economy resulting from the use of fat as an energy source in high energy rations.

MEAT AND BONE MEAL IN BROILER RATIONS

Results from broiler feeding trials at the University of Delaware showed that meat and bone meal up to at least 10% of the ration is an economical protein concentrate for use in high energy broiler rations, and 5-week results from a feeding trial indicated that even higher levels would have no adverse effect from high mineral levels or possible protein-energy imbalance ("Director's Digest" No. 35, May, 1967). The final 8-week results confirm the preliminary 5-week findings (Table 1).

Table 1. Growth and Feed Efficiency of Broilers Fed Commercial Feed with added Protein and Mineral (59 days).

<u>Ration</u>	<u>Wt.</u> lbs.	<u>Feed</u> Wt.
Commercial Feed A (Control)	4.46	1.93
Control + 2% M&B Meal	4.45	1.86
Control + 4% M&B Meal	4.47	1.83
Control + 6% M&B Meal	4.54	1.83
Control + 4.12% Bone	4.28	1.96
Control + 1.03% Bone	4.39	1.86
Control + 2.06% Bone	4.33	1.95
Control + 3.09% Bone	4.38	1.94
Commercial Feed A (Control #2)	4.45	1.88
Control + 2.01% SBOM	4.44	1.89
Control + 4.23% SBOM	4.43	1.85
Control + 6.35% SBOM	4.48	1.93
Control + 2.01% SBOM + 1.03% Bone	4.53	1.90
Control + 4.23% SBOM + 2.06% Bone	4.55	1.89
Control + 6.35% SBOM + 3.09% Bone	4.48	1.98