

## FEEDING LIQUID WHEY IN SWINE FATTENING RATIONS

The disposal of liquid whey, a by-product of cheese manufacture in North Dakota cheese plants, has been a problem. Its resistance to decomposition in sewage systems has made it necessary to find other means as disposal. Its use as a fertilizer is of limited value. However, it can be used in swine feeding to provide necessary protein.

This trial was designed to investigate the use of liquid whey as a supplement in swine fattening rations. In this experiment, whey, soybean oilmeal and lysine are compared, as supplements to a basic barley and oats fattening ration. Pigs of two starting weights were used, and were fed in concrete drylot, and on winter wheat pasture. The pigs were started on whey gradually, and did not develop any scouring.

Picked up daily, the whey was stored in a fiber glass tank, and was self-fed in the sour form through a gravity flow system and nipple waterers. Those pigs receiving whey were not allowed water after the second week, their entire liquid intake coming from the whey. The whey was furnished at no cost by the Dickinson Cheese Company. A charge of  $\frac{21}{100}$  cent per gallon was made to cover transportation costs.

Although the utilization of whey was impossible to measure accurately because of waste in feeding, it amounted to approximately 3.00 gallons per pig per day. This is an agreement with figures for liquid consumption as presented by the National Research Council.

The rations as they were fed and the cost per ton of finished feed is shown in table 7. Summer feeding trial results have been summarized in table 8. Table 9 summarizes results for three years.

Table 7 - Rations as fed, summer hog trials - 1975	
Ingredient	Ration Supplement

	SBOM	Lysine	Whey
Oats, lbs.	200	234	236
Barley, lbs.	676	739	740
Soybean oilmeal, lbs.	100	---	---
Lyamine, lbs.	---	3	---
Minerals, vitamins <sup>1</sup>	24	24	24
Price/ton, \$	132	129	126

<sup>1</sup>Includes: Limestone 9 lbs., di-cal 9 lbs., trace mineral salt 5 lbs., vitamin B complex 1 lb., vitamin A, 14 gms. vitamin D<sub>3</sub> and 180 gms. zinc sulfate per 1000 pounds feed.

<b>Table 8 - Weights, gains and feed cost, summer hog trials, 1975</b>						
	Ration Supplement					
	Whey	SBOM	Lysine	Whey	SBOM	Lysine
Concrete:						
Initial wt., lbs.	34	54	32	53	33	53
Final wt., lbs.	186	200	207	192	199	220
Gain, lbs.	152	145	174	138	166	166
Days fed	129	113	129	113	129	113

Avg. daily gain, lbs.	1.18	1.28	1.35	1.22	1.28	1.47
Feed/cwt gain, lbs.	273	287	371	369	408	384
Feed cost/cwt gain, \$	17.14	18.02	24.48	24.35	26.36	24.81
Pasture:						
Initial wt., lbs.	33	53	32	54	32	53
Final wt., lbs.	201	196	231	223	216	218
Gain, lbs.	168	143	199	169	184	165
Days fed	129	113	129	113	129	113
Avg. daily gain, lbs.	1.30	1.27	1.54	1.50	1.43	1.46
Feed/cwt gain, lbs.	286	262	334	328	319	355
Feed cost/cwt gain, \$	17.96	16.45	22.04	21.65	20.61	22.93

<b>Table 9 - Three year average for weight, gain and feed cost, 1973-75</b>						
	Ration Supplement					
	Whey		SBOM		Lysine	
Initial wt., lbs.	35	51	34	51	35	51
Final wt., lbs.	190	205	200	211	192	217
Gain, lbs.	156	154	165	160	158	166
Days fed	127	117	127	117	127	117

Avg. daily gain, lbs.	1.22	1.31	1.30	1.36	1.24	1.42
Feed/cwt gain, lbs.	285	297	410	397	395	386
Feed cost/cwt gain, \$	14.49	14.89	20.78	19.85	20.74	20.41

Summary: Three years of data indicates that pigs can be raised to slaughter weights very efficiently and economically when using liquid whey as a protein supplement. Pigs that were fed whey required 100 pounds less feed per 100 pounds gain in 1975. Feed savings for the three year period amounted to 107 pounds less feed/100 pounds gain, which amounted to a savings of approximately \$5.60/100 pounds gain over the soybean fed pigs and \$5.80/100 pounds gain over the lysine supplemented pigs.

Liquid whey feeding will be most successful when the following conditions exist: whey is available on a regular basis; the pigs weigh at least 35 pounds; PVC plastic or stainless steel feeding equipment is used to reduce corrosion, contamination, fly, and odor problems; and adequate protection from the weather is provided.

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