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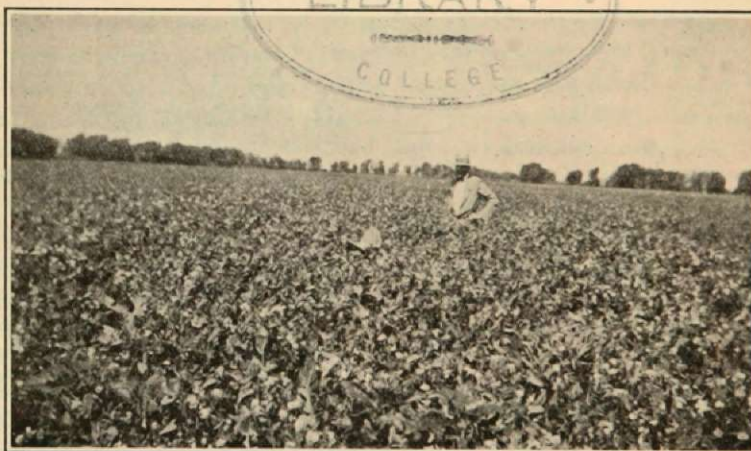
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Bulletin 381

October, 1931

FIELD PEAS FOR FATTENING PIGS

By H. B. OSLAND and GEO. E. MORTON



A typical peafield in the San Luis Valley.

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FIELD PEAS FOR FATTENING PIGS

By H. B. OSLAND and GEO. E. MORTON

Colorado produces a large amount of field peas. According to the Colorado yearbook there were 50,000 acres grown in 1929. Most of these peas are raised in the San Luis Valley and are used largely for fattening hogs and lambs. Only a small percentage of peas produced are used for seed and for the split-pea market.

The fattening of hogs on peas has become an important industry that fits in well with the general agriculture of the San Luis Valley. There is a comparatively small amount of labor connected with the production of peas and they furnish good feed for livestock during harvest time without a great deal of labor.

Hogging-off peas has been practiced in the San Luis Valley with varying degrees of success. A rather common practice is to hog-off the mature peas in the field during September and October and then put the pigs in the drylot. Another common practice is to allow the pigs to fatten out on the peafield alone without any supplementary feeds. This latter method has at times proved hazardous on account of death loss.

Previous experimental work with field peas indicates that peas alone are unsatisfactory for fattening hogs. Altho peas are quite palatable to hogs, they are rather hard to digest, according to results at the Ontario Station. Common practice and experimental work have shown that hogs can be pastured on peas alone for a short time at the beginning of the fattening period but the work has also shown that peas can be used to better advantage if they are supplemented by other feeds.

The 1930 yearbook shows that the San Luis Valley produced the following crops in 1929:

1. Field Peas	35,230 acres
2. Garden Peas	6,300 acres
3. Wheat	13,150 acres
4. Barley	22,530 acres
5. Oats	17,430 acres
6. Potatoes	26,780 acres
7. Alfalfa	50,000 acres

All the above feeds are well adapted for use in swine rations and in view of earlier experimental work, these feeds should help materially in utilizing peas to better advantage in fattening rations.

The value of efficient, concentrated, protein supplements in both growing and fattening rations has been conclusively demonstrated.

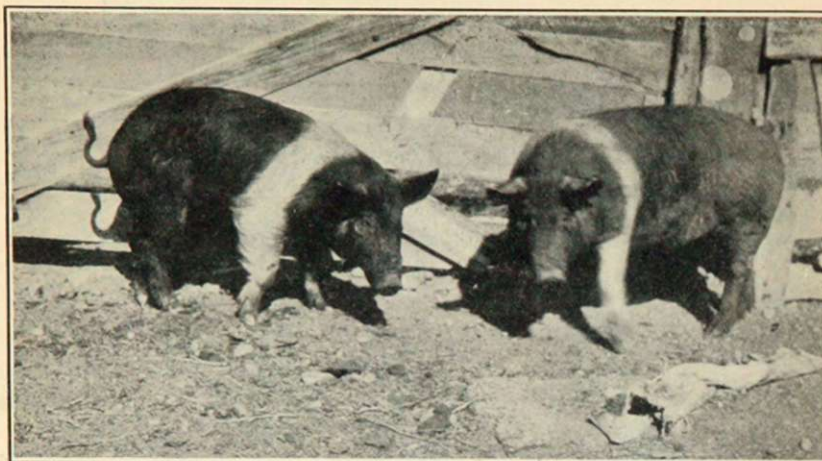


Fig. 1.—These pigs were fattened on peas alone. The pig on the left developed a clear case of rickets.

The San Luis Valley grows field peas and alfalfa, both of which are comparatively high in protein. Experimental data show, however, that the protein in peas is not of the best quality, and for that reason the addition of some protein supplement might prove a very valuable factor in cheapening production costs. Tankage, skimmilk, cottonseed meal and alfalfa meal are all efficient protein concentrates if they are used correctly and if they fit into the ration.

Hog shipments from the San Luis Valley have steadily declined during the past years until at present little more than half the hogs of former days are produced. The following table is reproduced thru the kindness of W. H. Olin, Supervisor of Agriculture for the Denver and Rio Grande Western Railroad Company and Station Agent, A. W. Hake, Alamosa, Colorado:

Hog Shipments from the San Luis Valley 1924 to 1930.

	California	Pueblo	Denver	Beyond	Total
1924	70180	3956	7350	8322	89808
1925	52800	5702	4410	1254	64166
1926	28930	1932	2152	2052	35066
1927	35200	3956	4214	6478	49848
1928	30910	2144	4606	5286	43246
1929	36300	2852	5194	5700	50046
1930	37950	1012	3716	3534	46212

With these facts in mind, peafield hog-feeding experiments were planned in an effort to determine if the use of various home-grown feeds and possibly the addition of a shipped-in protein supplement might not be helpful in producing a cheaper, more economical ration than the old common practice of hogging-off peas alone.

1930 EXPERIMENT

Objects of the Experiment

1. To study the effects of different feeds and combinations of available feeds when fed in conjunction with field peas that are hogged off.
2. To compare the value of alfalfa meal, tankage and skimmilk as protein supplements to peas being hogged off.
3. To determine the feeding value of cull potatoes as a succulent carbohydrate feed fed with peas being hogged off.
4. To determine the gain in live-weight that may be secured by hogging off field peas.

Hogs Used

High-grade Hampshire pigs were used. They were in good condition, vigorous and thrifty when started on the test. All the pigs were vaccinated for cholera and wormed previous to starting on experiment. They were sorted into 9 pens of 10 pigs each. The different pens were uniform in size, weight, type, sex, condition and breeding.

Rations Fed

- | | |
|-----------|---|
| Lot No. 1 | Peafield |
| Lot No. 2 | Peafield, ground barley |
| Lot No. 3 | Peafield, alfalfa meal |
| Lot No. 4 | Peafield, ground barley, alfalfa meal |
| Lot No. 5 | Peafield, ground barley, tankage |
| Lot No. 6 | Peafield, ground barley, potatoes, alfalfa meal |
| Lot No. 7 | Peafield, ground barley, potatoes, tankage |
| Lot No. 8 | Peafield, ground barley, skimmilk |
| Lot No. 9 | Barley, tankage |

Feeds Used

A 30-acre plot of Canadian field peas was used in this test. A yield test made by hand-picking a representative square rod of peas showed a 19.8-bushel yield of threshed peas. The protein content of these peas was 21.09 percent and the average moisture content during the feeding period was 10.86 percent.

Barley was grown locally and represented a typical strain of Trebi. All the barley fed was ground. It contained 11.5 percent moisture.

Alfalfa Meal was secured from a nearby ranch and was from good leafy, first-cutting alfalfa. It contained 11.49 percent moisture.

Tankage was bought from the Nuchols Packing Company, Pueblo. It was guaranteed to contain 60 percent protein and showed an average moisture content of 11.02 percent.

Skimmilk was brought daily from a nearby creamery.

Cull Potatoes were bought locally. Due to lack of storing facilities, the potatoes were fed in a frozen condition thruout most of the fattening period.

Salt used was No. 4 ground salt.

Discussion of Results

Altho field peas made an excellent foundation to fattening rations for pigs when properly supplemented with other home-grown feeds, this experiment indicates that it is not economical to pasture pigs on peas alone. The test shows that supplemented rations are far more economical to use, than a straight peafield ration when 20-bushel peas are valued at \$10.00 per acre and above. The feed cost per cwt. gain on peafield alone was abnormally high, and the average daily gain was very low, averaging only .9 of a pound per pig per day on a market basis. The peafield pasture showed a replacement value in terms of \$30-barley and \$70-tankage of only \$13.83 per acre; or was worth 70 cents per bushel.

To produce 100 pounds of pork in the feedlot, it required 886.25 pounds of peas, equal to 1 acre of peas yielding 14.77 bushels. On a market basis, it required 932.58 pounds of peas or one 15.54-bushel acre of peas per cwt. pork produced.

Peas alone did not constitute a balanced ration. This was indicated by one pig that developed rickets in the lot pastured on the peafield. All the pigs in the straight peafield lot showed a lack of finish, indicating peas to be a growing ration rather than a fattening feed.

Value of Barley.—The addition of barley to a peafield pasture cheapened gains and materially decreased costs, indicating that barley is a good supplement to peas. Four hundred and nine pounds of barley replaced .53 acres of peas. With peas at \$15.00 per acre, the ground barley showed a feed-replacement value of \$38.80 per ton. Its market value was only \$30.00 per ton. The experiment showed that the higher the value of the peafield, the more profitable the addition of barley to the ration.

Value of Alfalfa Meal.—Alfalfa meal, as the only supplement to a straight peafield ration, produced the cheapest gains in the test, but the combination of these two feeds produced growth rather than finish. A possibility presents itself of using this type of ration for growing the pigs and then finishing them for market in drylot on a grain-and-protein-supplement ration. Alfalfa meal fed in connection with peafield pasture and grain produced cheaper gains per cwt. than a ration

of grain alone on peafield pasture. Alfalfa meal added to peafield pasture and grain did not increase the average gain but did decrease the cost per cwt. gain.

Value of Tankage.—Tankage, when fed in addition to a peafield and barley ration, showed a replacement value of \$99.71 per ton with peas at \$15.00 per acre and barley at \$30.00 per ton. The pigs fed on tankage showed a smoother finish than any of the other pigs in the test except those fed skim milk. Tankage increased the average gain of the pigs but at present prices, it did not produce more economical gains than did the alfalfa meal.

Skim milk.—In this test skim milk did not prove economical as a supplement to a peafield-barley ration, with milk figured at the local price of 3 cents per gallon. One hundred gallons of skim milk replaced only .173 acres of peas and 14.5 pounds of barley. At present feed prices, the skim milk was worth 2.8 cents per gallon. Skim milk produced the highest daily gains and the milk-fed pigs showed the best bloom and finish at the end of the test of any lot in the experiment. This indicates that with barley at \$1.50 per cwt. and tankage at \$70.00 per ton, skim milk may profitably be added to the ration if it can be fed at 33 cents per cwt. or lower.

Cull Potatoes.—A small amount of potatoes added to the ration not only increased the rate of gain but also cheapened the cost of gain. The potato consumption was very low. The pigs would eat them for a few days and then refuse them for several days. The succulence furnished by the potatoes evidently had a beneficial effect and cull potatoes should be included in a grain ration on peafield pasture whenever possible.

Peafield Hog Feeding Experiment—Colorado Experiment Station
10 Pigs per Lot—Fed 105 Days (October 23, 1929 to February 4, 1930)
 (Table Based on One Average Pig)

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Feed Cost per cwt. Gain (Market) with Peas @										
(19.8 bu. per Acre Yield)	\$20.00 per Acre	15.70	11.23	9.43	10.79	10.54	9.89	9.93	10.75	9.33
	19.00	14.92	10.98	8.96	10.56	10.34	9.69	9.75	10.60	9.33
	18.00	14.13	10.72	8.50	10.32	10.15	9.49	9.57	10.46	9.33
	17.00	13.35	10.47	8.03	10.09	9.95	9.30	9.40	10.31	9.33
	16.00	12.56	10.21	7.57	9.85	9.76	9.10	9.22	10.16	9.33
	15.00	11.78	9.96	7.10	9.62	9.56	8.90	9.04	10.02	9.33
	14.00	10.99	9.70	6.63	9.38	9.37	8.70	8.86	9.87	9.33
	13.00	10.21	9.45	6.17	9.15	9.17	8.50	8.68	9.72	9.33
	12.00	9.42	9.19	5.70	8.91	8.98	8.31	8.51	9.57	9.33
	11.00	8.64	8.94	5.24	8.68	8.78	8.11	8.33	9.43	9.33
	10.00	7.85	8.68	4.77	8.44	8.50	7.91	8.15	9.28	9.33

Bold faced figures show above-given ration produces cheaper gains than straight peafield when peas are the price indicated.

*Actual shrink for whole group to Denver, 2.98 percent.

Financial Statement Based on Actual Costs and Market Returns
10 Pigs per Lot Fed 105 Days (October 23, 1929 to February 4, 1930)
(Table Based on One Average Pig)

Lot Number	1	2	3	4	5	6	7	8	9
Ration Fed	Peafield	Peafield Barley	Peafield Alfalfa Meal	Peafield Barley Alfalfa Meal	Peafield Barley Tankage	Peafield Barley Potatoes Alf. Meal	Peafield Barley Potatoes Tankage	Peafield Barley Skimmilk	Barley Tankage
Salt Self-Fed in All Lots									
Cost per Pig @ \$10.00 cwt.....	6.43	6.38	6.26	6.34	6.26	6.35	6.52	6.35	6.36
Feed Cost per Head (Market) with Peas \$15 per Acre.....	14.81	14.69	9.61	13.41	13.47	12.50	13.74	16.27	11.80
Est. Fixed Costs Including Interest, Labor and Equipment	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
Shipping and Selling Expense	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45
Total Cost at Market	21.24	23.11	17.19	21.99	22.18	21.29	22.73	25.21	21.86
Selling Price per cwt.	9.80	9.70	9.80	9.90	9.90	9.90	9.90	9.95	10.05
Gross Receipts per Pig	15.54	18.87	16.11	18.58	18.85	18.79	20.16	21.37	19.11
Loss per Pig with Pens @									
\$20.00 per acre	9.40	5.90	3.40	4.87	4.55	3.76	3.80	4.95	2.75
19.00	8.06	5.57	2.98	4.58	4.30	3.50	3.53	4.72	2.75
18.00	7.92	5.23	2.51	4.28	4.06	3.25	3.30	4.51	2.75
17.00	7.18	4.01	2.03	4.00	3.80	3.01	3.07	4.28	2.75
16.00	6.44	4.57	1.56	3.70	3.56	2.76	2.82	4.05	2.75
15.00	5.79	4.24	1.08	3.41	3.33	2.50	2.57	3.84	2.75
14.00	4.96	3.90	.60	3.11	3.06	2.25	2.32	3.61	2.75
13.00	4.22	3.57	.13	2.83	2.80	2.00	2.07	3.39	2.75
12.00	3.47	3.23	+ .34	2.53	2.56	1.76	1.84	3.16	2.75
11.00	2.74	2.91	+ .81	2.24	2.30	1.51	1.59	2.95	2.75
10.00	1.99	2.57	+1.29	1.95	2.06	1.25	1.34	2.72	2.75
Margin Over Purchase Price Needed to Break Even....	3.39	1.88	.45	1.72	1.65	1.21	1.16	1.74	1.50
Feed Prices Used:									
Peafield	\$15.00 per acre			Tankage			\$70.00 per ton		
Barley (Ground)	1.50 per cwt.			Skimmilk			0.03 per gal.		
Alfalfa Meal	15.00 per ton			Cull Potatoes			0.50 per cwt.		

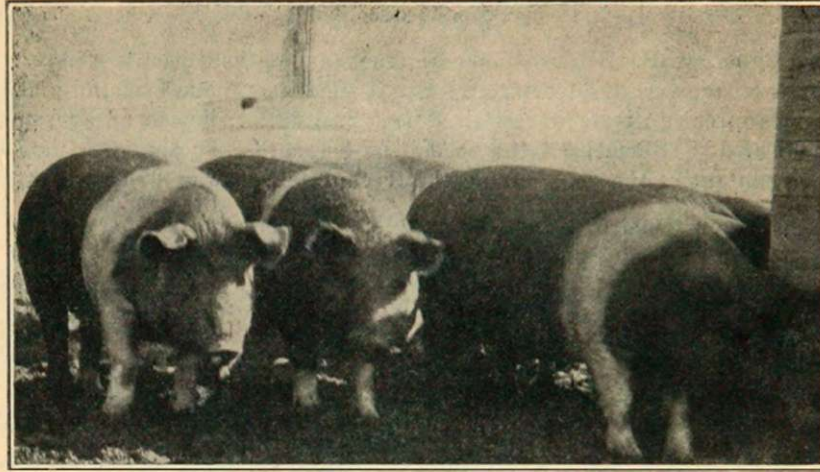


Fig. 2.—Pigs fattened on peas supplemented with barley, alfalfa meal and cull potatoes.

1931 EXPERIMENT

Objects of Experiment

1. Repetition of the 1930 test for confirmation of results found.
2. To determine the value of triple mixture as a protein supplement to peas being hogged off.
3. To compare the feeding value of garden peas vs. field peas.

Hogs Used

Eighty high-grade Hampshire pigs were used in this test. They were vigorous and thrifty pigs and in good condition when started on the test. The pigs were vaccinated for hog cholera previous to starting on experiment. The various pens were uniform in size, weight, type, sex, condition and breeding.

Ratons Fed*

- | | |
|------------|--|
| Lot No. 2 | Canadian peasfield |
| Lot No. 3 | Canadian peasfield, ground barley |
| Lot No. 4 | Canadian peasfield, ground barley, skim milk |
| Lot No. 5 | Canadian peasfield, ground barley, alfalfa meal |
| Lot No. 6 | Canadian peasfield, ground barley, tankage |
| Lot No. 7 | Canadian peasfield, ground barley, cull potatoes, alfalfa meal |
| Lot No. 8 | Canadian peasfield, ground barley, triple mixture |
| Lot No. 9 | Garden peasfield, ground barley, triple mixture |
| Lot No. 10 | Barley, tankage |

*Lot No. 1 on a ration of Canadian peasfield and alfalfa meal for 60 days and barley and alfalfa meal for the last 38 days, is omitted because of uncontrollable factors which influenced results.

Feeds Used

Canadian Peafield.—A 30-acre tract of peas was used in the test. This acreage was divided into 8 lots. A yield test made by hand-picking a representative square rod of peas in each lot showed an average yield of 10.85 bushels of threshed peas per acre. The average moisture content of the peas during the feeding period was 9.79 percent.

Garden Peafield.—A 3.33-acre plot was seeded to garden peas in the spring of 1930 following field peas. The yield test in the fall of 1930 showed this lot to contain 60 percent of garden peas and 40 percent of volunteer field peas. The average moisture content of the mixed peas was 8.55 percent.

Barley contained 10.46 percent moisture. It was Trebi barley grown locally and weighed 46 pounds per bushel. All the barley fed was ground.

Alfalfa Meal was good leafy first-cutting alfalfa and contained 8.32 percent moisture. It was ground very fine.

Tankage used was 60 percent protein tankage and contained 5.80 percent moisture.

Triple Mixture used in this test was a mixture of 50 percent tankage, 25 percent alfalfa meal, 25 percent cottonseed meal. This mixture contained 44 percent protein and showed an average moisture content of 6.71 percent for the feeding period.

Skimmilk was bought daily from a nearby creamery.

Cull Potatoes were bought locally and kept in a frost-proof cellar. They were fed to the pigs raw and uncut.

Salt used was No. 4 ground salt.

Chemical Analysis of Feeds Fed

	Water	Ash	Crude Protein	Carbohydrate			No. of Analysis
				Fiber	N. F. Extract	Fat	
Field Peas	9.84	2.52	25.47	7.23	53.50	1.44	4
Garden Peas	8.84	2.60	24.03	8.37	53.63	1.85	4
Ground Barley	10.84	2.56	9.16	19.72	64.47	2.28	2
Tankage	6.03	21.32	57.46	3.17	1.08	10.99	4
Cottonseed Meal	8.61	5.65	42.58	12.47	23.88	6.83	2
Alfalfa Meal	9.21	5.94	11.48	30.25	41.35	1.80	2

Discussion of Results

As in the previous test, peafields alone made an unsatisfactory ration. The feed cost per cwt. gain was very high compared with the other rations used and the daily gain was very low, averaging only .75 lb. per pig per day on a market basis. But field peas again formed a good foundation for a fattening ration especially when supplemented with home-grown feeds.

To produce 100 pounds of pork in the feedlot 854.76 pounds of peas were required or, in other words, to produce 100 pounds of pork it required 1 acre of peas yielding 14.25 bushels when peas were the only feed fed. On a market basis 929.63 pounds of peas or 1 acre yielding 15.49 bushels was required to produce 100 pounds of gain.

The garden peas decreased both the grain and protein concentrate requirement per unit gain but the additional seed cost of an acre of garden peas made the cost of producing 100 pounds of pork higher than with field peas. An acre of garden peas showed a feed replacement value of \$11.86. The experiment also indicated that field peas (Canadian) were worth only 70.18 percent the value of garden peas at existing prices of feeds. More work must be done with a pure stand of garden peas before any definite conclusions can be drawn.

Value of Barley.—On the basis of feed required to produce unit gains, each ton of ground barley fed replaced 3.835 acres of peas. With peas at \$8.00 per acre, the ground barley was worth \$30.68 per ton. This test showed again that the higher the cost of peas the more essential the addition of barley to the ration if the cost of pork production is to be lowered.

Value of Alfalfa Meal.—Alfalfa meal, a home-grown product, again proved itself a very desirable addition to a peafield-and-grain ration. It showed nearly the same rate of gain as tankage and cheapened the cost per cwt. gain slightly more than did tankage when fed with barley on the peafields. In both years' tests alfalfa meal has shown a remarkable replacement value and has proved itself to be an ideal supplement when pigs are fattened on the peafields.

Tankage.—One ton of tankage replaced 4.38 acres of peas and 3545.60 pounds of barley. With peas at \$8.00 per acre and barley at \$27.00 per ton, tankage was worth \$83.91 per ton. The tankage-fed pigs showed a very smooth finish and gloss at the end of the test. The necessity of an addition of a protein supplement to a peafield ration was shown very clearly. However, at present feed prices, tankage did not prove as economical as alfalfa meal. The average daily gain of the two lots was slightly in favor of the tankage but alfalfa meal produced 100 pounds of pork cheaper than did tankage.

Peafield Hog-Feeding Experiment—Colorado Experiment Station
8 Pigs per Lot—Fed 98 Days (November 9, 1930 to February 15, 1931)
(Table Based on One Average Pig)

Lot Number	2	3	4	5	6	8	9	7	10
Ration Fed	Peafield	Peafield Barley	Peafield Barley Skimmilk	Peafield Barley Alf. Meal	Peafield Barley Tankgae	Peafield Barley Triple Mix.	Garden Peafield Barley Triple Mix.	Peafield Barley Potatoes Alf. Meal	Barley Tankage
Salt Self-Fed in All Lots									
Feedlot Weight at Start	79.8	80.5	79.6	81.0	80.2	81.6	81.1	80.0	81.7
Market Weight at Denver	153.3	180.4	202.8	190.1	189.7	187.9	190.8	183.2	195.3
Gain at Market	73.5	99.9	123.2	109.0	109.5	106.3	118.7	103.2	113.6
Daily Gain (Market Weight)	.75	1.02	1.26	1.11	1.12	1.08	1.21	1.05	1.16
Shipping Shrinkage (Percentage)*	4.87	4.87	4.87	4.87	4.87	4.87	4.87	4.87	4.87
Average Daily Feed, lbs.									
Peafield (Acres)									
(10.85 bu. Yield)	.0103	.0038	.0040	.0040	.0034	.0037	.0041	.0038	
Ground Barley		5.61	4.99	5.63	5.55	5.59	5.65	4.66	6.63
Tankage					.84				.52
Triple Mixture						.55	.33		
Alfalfa Meal				.07				.03	
Cull Potatoes								.96	
Skimmilk (gals.)			1.00						
Salt	.006	.006	.004	.006	.006	.004	.008	.006	.006
Feed Required for 100 lbs.									
Gain (at Market)									
Peafield (Acres)									
(10.85 bu. Yield)	1.428	.372	.320	.359	.305	.340	.335	.363	
Ground Barley		550.72	396.64	505.89	496.49	514.86	466.19	442.53	548.02
Tankage					30.59				45.14
Triple Mixture						50.91	27.48		
Alfalfa Meal				5.85				2.67	
Cull Potatoes								91.10	
Skimmilk (gals.)			79.53						
Salt	.85	.56	.36	.57	.57	.41	.63	.55	.55

Feed Cost per 100 lbs. Gain (at Market)										
with Field Peas @										
	\$13.00 per Acre**	18.57	12.28	11.91	11.55	11.77	12.74	13.06	10.95	9.01
	12.00	17.15	11.90	11.59	11.19	11.46	12.40	12.73	10.59	9.01
(10.85 bu. per	11.00	15.72	11.53	11.27	10.83	11.16	12.06	12.39	10.22	9.01
Acre Yield)	10.00	14.29	11.16	10.95	10.47	10.85	11.72	12.06	9.86	9.01
	9.00	12.85	10.79	10.63	10.11	10.55	11.38	11.72	9.50	9.01
	8.00	11.43	10.42	10.31	9.75	10.24	11.04	11.39	9.13	9.01
	7.00	10.01	10.04	9.99	9.39	9.94	10.70	11.05	8.77	9.01
	6.00	8.58	9.67	9.67	9.03	9.63	10.36	10.72	8.41	9.01
	5.00	7.15	9.30	9.35	8.68	9.33	10.02	10.38	8.05	9.01

Bold faced figures show above-given ration produces cheaper gains than straight peasfield when peas are the price indicated.

*Actual shrink for whole group to Denver, 4.87 percent.

**And Garden Peas Charged \$5.00 Above Cost of Field Peas.

Financial Statement Based on Actual Costs and Market Returns
8 Pigs per Lot Fed 98 Days (November 9, 1930 to February 15, 1931)
(Table Based on One Average Pig)

Lot Number	2	3	4	5	6	8	9	7	10
	Peafield	Peafield Barley	Peafield Barley Skimmilk	Peafield Barley Alf. Meal	Peafield Barley Tankgae	Peafield Barley Triple Mix.	Garden Peafield Barley Triple Mix.	Peafield Barley Potatoes Alf. Meal	Barley Tankage
Ration Fed									
Salt Self-Fed in All Lots									
Cost per Pig @ \$10.00 cwt.....	7.98	8.05	7.96	8.10	8.02	8.16	8.11	8.00	8.17
Feed Cost per Head (Market)	8.40	10.41	12.70	10.63	11.21	11.74	13.52	9.42	10.23
Est. Fixed Cost Including Interest, Labor and Equipment	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
Shipping and Selling Expense	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46
Total Cost at Market	20.09	22.17	24.37	22.44	22.94	23.61	25.34	21.13	22.11
Selling Price per cwt.	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10
Gross Receipts per Pig	10.89	12.81	14.40	13.50	13.47	13.34	14.19	13.01	13.86
Loss per Pig with Field Peas @ \$13.00 per Acre*	14.45	11.21	11.95	10.90	11.15	12.08	13.14	10.00	8.25
12.00	13.41	10.83	11.55	10.51	10.81	11.71	12.74	9.63	8.25
(10.85 bu. per Acre Yield)	11.00	12.35	10.47	11.16	10.12	10.48	11.35	12.34	9.25
10.00	11.30	10.10	10.76	9.37	10.14	10.90	11.95	8.87	8.25
9.00	10.24	9.73	10.37	9.33	9.81	10.63	11.55	8.50	8.25
8.00	9.20	9.36	9.97	8.94	9.47	10.27	11.15	8.12	8.25
7.00	8.16	8.98	9.58	8.55	9.15	9.91	10.75	7.75	8.25
6.00	7.11	8.61	9.19	8.16	8.81	9.54	10.36	7.38	8.25
5.00	6.06	8.24	8.79	7.77	8.48	9.18	9.95	7.01	8.25
Margin over Purchase Price Needed to Break Even ...	6.00	5.19	4.92	4.71	4.99	5.46	5.58	4.43	4.22
Feed Prices Used:									
Canadian Peafield	\$ 8.00 per acre				Triple Mixture				
Garden Peafield	13.00 per acre				Skimmilk				
Ground Barley	1.35 per cwt.				Cull Potatoes				
Tankage	71.00 per ton				Salt				
Alfalfa Meal	15.00 per ton								

Skimmilk.—With present feed prices, skimmilk had a replacement value of \$3.14 per 100 gallons. The addition of skimmilk to the ration again produced the best bloom and highest finish of any of the lots. This test indicates that if skimmilk can be obtained for 3 cents or less per gallon it supplies a very desirable protein supplement to a peafield-barley ration. Both tankage and alfalfa meal did, however, produce cheaper pork than skimmilk altho the daily gain was considerably greater where skimmilk was used.

Value of Triple Mixture.—This combination of protein concentrates did not show the beneficial effects which were received by the use of alfalfa meal, tankage or skimmilk. The average daily gain was comparatively low and the cost per 100 pounds of pork produced was higher than with the other protein-rich feeds used. More work must be done with this supplement before any definite conclusions can be drawn.

Value of Cull Potatoes.—The addition of cull potatoes to a peafield ration substantiated last year's work. Cull potatoes are a home-grown product and are usually of low market value and therefore, they make an ideal addition to the ration. Even tho they did not increase daily gains in this year's test, they decreased the cost per cwt. gain very materially. One ton of cull potatoes was worth \$18.60 with peas selling at \$8.00 per acre.

Peafield Carrying Capacity Per Acre
(100 Days Pasture)

Ration	No. of Pigs per Acre	
	1930 20 bu. Yield per Acre	1931 11 bu. Yield per Acre
Peafield	1.3	1.0
Peafield + Alfalfa Meal	2.0	
Peafield + Barley	3.0	2.7
Peafield + Barley + Alfalfa Meal	3.5	2.6
Peafield + Barley + Tankage	4.0	3.0
Peafield + Barley + Skimmilk	5.5	2.6
Peafield + Barley + Triple Mixture		2.8
Peafield + Barley + Potatoes + Alfalfa Meal	4.0	2.7
Peafield + Barley + Potatoes + Tankage	4.5	
Garden Peafield + Barley + Triple Mixture		2.5

SUMMARY OF THE TWO TESTS

1. Peafield pasture alone produced unsatisfactory gains.
2. The two experiments indicate that it takes 931 pounds of peas to produce 100 pounds of pork on the market when peas are pastured without supplemental feeds.
3. Peas valued on a market basis produced cheaper gains when supplemented with other feeds.
4. Barley is a good grain supplement to a peafield pasture.
5. A protein supplement is essential with a peafield-barley ration.
6. Alfalfa meal proved the most desirable protein supplement at existing prices of feeds.
7. Tankage is a good protein supplement to a peafield-barley ration.
8. Skimmilk costing less than 35 cents per cwt. proved to be as good a protein supplement to a peafield-barley ration as either alfalfa meal or tankage.
9. Cull potatoes should be added to the peafield ration.