UNIVERSITY OF ILLINOIS
Agricultural Experiment Station

BULLETIN No. 247

FEEDING PIGS ON PASTURE

By JOHN B. RICE

URBANA, JANUARY, 1924

Contents of Bulletin No. 247

SUMMARY

The various experiments reported herein were conducted in an attempt to determine the amounts of concentrates that are most profitable to feed in conjunction with pasture crops for growing and fattening pigs. Experiments were also conducted to determine the comparative values of various pasture crops for growing market pigs, the use of the self-feeder on pasture, and the possibility of carrying heavy, fat pigs, and light, thin pigs through the summer.

1. Without concentrates young pigs made very little gain on either rape or alfalfa pastures.

2. A greater percentage of pigs became unthrifty and had to be taken from the lots receiving light rations than from those receiving full rations.

3. Pigs fed light rations of corn on pasture during the summer and finished on corn and tankage in the fall required more concentrates, per hundred pounds, to reach an approximate weight of 225 pounds, in two of three experiments, than did pigs which received a medium ration of corn on pasture. In turn, pigs fed a medium ration on pasture required more concentrates to finish in the fall, in all the experiments, than the pigs which were on the self-feeder during the summer.

4. Medium corn rations for pigs on pasture were found to have an advantage over full rations in the possibility they afforded of making use of a larger percentage of new corn; also in the smaller requirement for high-priced protein supplements. Pigs which are fed medium rations, however, are usually sold on a later and lower market than full-fed pigs.

5. The self-feeding of corn and tankage to pigs on pasture proved to be an economical and labor-saving method of growing and fattening pigs for the early fall market.

6. For maximum gains, self-fed pigs on pasture required some tankage. Pigs fed medium corn rations on pasture without tankage were fattened in the fall somewhat less economically than the pigs which had received a small amount of tankage during the summer.

7. Pigs that had been fed a small amount of corn during the summer consumed more tankage in the fall, when self-fed their tankage, than could be used economically.

8. The addition of middlings to a self-fed ration of corn and tankage increased the daily gains and also the cost of gains. Such a difference in cost may be offset by a higher market.

9. Little difference was found in the actual feeding value of the various pasture crops used. An average of several tests would indicate that alfalfa had a slightly higher feeding value than rape. In the one experiment with red clover slightly more rapid daily gains were secured than with alfalfa or rape. In the two experiments with sweet clover, the results were not so good as with either rape or alfalfa. The combination of Canadian field peas and oats followed by rape and later by soybeans proved to be no more satisfactory than either rape or alfalfa alone and caused the additional trouble of providing the several forages.

10. No marked advantage was found in pasturing pigs on both alfalfa and rape over pasturing them on either crop separately.

11. The carrying of fat, heavy hogs through the summer proved to be unprofitable because of the slow daily gains and the high consumption of concentrates per 100 pounds gain.

12. Fairly satisfactory gains were made by light, thin pigs carried through the summer on a moderate grain ration and fattened on full ration in the fall. The concentrate requirements were somewhat high. A greater profit could be made in carrying them through the summer only as the price for them in the fall at the heavier weights would be greater than the price for them at the lighter weights in the spring. Because of the extra risk and labor involved, however, it seems better under ordinary conditions not to hold fall pigs through the summer.

ACKNOWLEDGMENT

Acknowledgment is hereby made to Professor William Dietrich, formerly Assistant Chief in Swine Husbandry, under whose direction the first of these experiments were started, and also to Mr. W. J. Carmichael, Associate in Animal Husbandry, who for a time had charge of the work.

FEEDING PIGS ON PASTURE

By JOHN B. RICE, Associate in Swine Husbandry

PURPOSE OF EXPERIMENTS

The primary purpose of the investigations reported in this bulletin was to study the amounts of concentrates that are most profitable to feed in conjunction with pasture crops for growing and fattening pigs. The concentrates used were corn, tankage, and middlings. Data were also obtained on the comparative values of various pasture crops for growing market pigs, the use of the self-feeder on pasture, and the possibility of carrying heavy, fat pigs and light, thin pigs through the summer on pasture. The experiments were conducted during the years 1911 to 1919.

PLAN

Pigs Used. The four hundred and five pigs used in these experiments were of several breeds and with but few exceptions were produced on the University Farm. Duroc-Jerseys and Poland Chinas predominated, but some Berkshires, Chester Whites, Hampshires, Tamworths, Large Yorkshires, and cross-breds were used. All pigs were of March and April farrow excepting those used in Lots 44 and 45 (in the experiments in which fall pigs were carried through the summer).

Selection of Pigs for Lots. The lots for each test were made up of pigs as uniform as possible in breed, age, weight, sex, thrift, lines of breeding, and individual merit.

Weighing. The pigs were weighed individually every two weeks during the experiments. The weighing was done before the morning feed was given.

The hand-fed rations were weighed at the time of feeding. The feeds for the self-feeders were weighed in quantities sufficient for several days' rations. With each weighing of the pigs, the feed remaining was weighed and returned to the feeders.

In the case of pigs which were removed from an experiment before its completion, the data up to the time of removal are included in the totals and averages shown in the tables.

Quarters. During the winter months, the pigs were quartered in small movable houses. During the summer, sunshades were the only shelter furnished.

Length of Feeding Periods. Since the purpose of the investigations was to secure data on the growing and fattening of pigs, the tests in most cases covered the period from shortly after weaning time until a marketable weight of approximately 225 pounds had been attained. In a few experiments, however, the pigs were fed for a definite period of time.

Concentrates Fed. The concentrates used were No. 2 yellow corn, shelled, 60-percent protein tankage, and gray flour middlings of the best quality obtainable.

Omission of Financial Statements. Financial statements are omitted from this bulletin because of the impossibility of any set of feed prices even approximating the prevailing conditions for all localities at different times of the year and in different years. The concentrate costs are expressed in terms of the number of pounds required for 100 pounds gain. From these data the cost of gains can readily be calculated at the prevailing prices. No value is assigned to the forage consumed. This fact should be kept in mind, especially when pigs fed on pasture are compared with those fed in the dry lot.

FEEDING OF MEDIUM RATIONS OF CORN, WITH AND WITHOUT TANKAGE, FOR PIGS ON PASTURE

RAPE, SWEET CLOVER, AND BLUE-GRASS PASTURES

Six lots of eight pigs each were started on experiment June 15, 1918, in an attempt to determine the comparative value of medium rations of corn, with and without the addition of tankage, for pigs on pasture. The pigs averaged 38 and 39 pounds in weight. The various lots were placed on rape, sweet-clover, and blue-grass pastures and were fed as follows:

Lot 1. Rape pasture: two-thirds ration corn[1]
Lot 2. Rape pasture: two-thirds ration corn, ¼ pound tankage daily per pig
Lot 3. Sweet clover pasture: two-thirds ration corn
Lot 4. Sweet clover pasture: two-thirds ration corn, ¼ pound tankage daily per pig
Lot 5. Blue-grass pasture: two-thirds ration corn
Lot 6. Blue-grass pasture: two-thirds ration corn, ¼ pound tankage daily per pig

The *rape* was sown about April 1, and by the time the experiment was begun had attained a height of six to twelve inches. By July 10

[1] Three pounds of corn daily per 100 pounds live weight, which is about two-thirds as much as the pigs would have consumed.

TABLE 1.—MEDIUM RATIONS OF CORN, WITH AND WITHOUT TANKAGE, FOR PIGS ON PASTURE

Experiment begun on June 15, 1918. Pigs changed from pasture to dry lot on October 5.

Lot No.	1	2	3	4	5	6
Number of pigs	8	8[2]	8[3]	8	8[4]	8[5]
Days on experiment	210	196	196	203	210	189
Experiment ended	Jan. 11	Dec. 28	Dec. 28	Jan. 4	Jan. 11	Dec. 21
Forage, ½ acre per lot	Rape	Rape	Sweet clover	Sweet clover	Blue grass	Blue grass
Ration on pasture	Corn ⅔ ration[1]	Corn ⅔ ration; tankage ¼ lb. daily per pig	Corn ⅔ ration	Corn ⅔ ration; tankage ¼ lb. daily per pig	Corn ⅔ ration	Corn ⅔ ration; tankage ¼ lb. daily per pig
Ration in dry lot	Corn and tankage in self-feeder					

Feeds Consumed and Gains Throughout Experiment, in Both Pasture and Dry-Lot Periods

Average weight per pig	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*
Initial weight	39	38	38	38	38	38
Weight on Oct. 5	123	122	106	117	109	117
Final weight	231	224	224	230	233	227
Gain						
Total gain per lot	1540	1446	1051	1529	1540	1456
Av. daily gain per pig	.92	.94	.79	.94	.92	.98
Concentrates consumed per lot						
Corn	6060	5316	4239	5844	6127	5296
Tankage	492	542	403	580	528	565
Total	6552	5858	4642	6424	6655	5861
Average daily ration per pig						
Corn	3.61	3.46	3.18	3.60	3.65	3.56
Tankage	.29	.35	.30	.36	.31	.38
Total	3.90	3.81	3.48	3.96	3.96	3.94
Concentrates per 100 pounds gain						
Corn	393	368	404	382	398	364
Tankage	32	37	38	38	34	39
Total	425	405	442	420	432	403
Hay removed per acre, *lbs.*	.....	.....	.....	.....	3510	3510

[1]Three pounds of corn per 100 lbs. live weight daily, which is almost two-thirds as much as the pigs would consume.

[2]Pig taken out July 27, weight 38 lbs.; replaced by pig weighing 55 lbs. Pig taken out Nov. 26, weight 55 lbs.

[3]Pig taken out Aug. 5, weight 29 lbs.; replaced by pig weighing 49 lbs. Pig died Aug. 13, weight 25 lbs.; replaced by pig weighing 60 lbs. Pig taken out Aug. 29, weight 35 lbs. Pig taken out Sept. 7, weight 26 lbs.

[4]Pig taken out July 20, weight 20 lbs.; replaced by pig weighing 43 lbs.

[5]Pig taken out July 20, weight 17 lbs.; replaced by pig weighing 42 lbs. Pig taken out Nov. 26, weight 196 lbs.

it had made a growth of two to three feet. This early growth, with its deep roots, carried the crop through July and August. As the fall rains came, the rape grew well again. While the forage was not so tender during the summer as it might have been had the crop been sown later, it seems necessary in the central and northern part of the state to let rape attain a good growth early in the season in order that sufficient forage may be had during the hot, dry months. The *sweet clover* was also sown about April 1, and had attained a height of six to eight inches at the time the pigs were placed on experiment. In early July it had grown so tall that it became necessary to clip it with the weeds and grass that had grown on the lots. This cutting was left on the ground. The *blue grass* was an old sod on rather low ground. A small amount of alfalfa was scattered through this blue grass.

The pigs were continued on pasture until October 5, when they were placed in the dry lot with access to corn and tankage in self-feeders. The various lots were kept on experiment until they had reached an approximate weight of 225 pounds, the dates ranging from December 21 to January 11. The data are reported in Table 1.

This method of growing pigs (feeding two-thirds of the corn they would consume while on pasture) is a practice followed by many corn-belt farmers in carrying pigs through the summer. Maximum gains are not obtained while the pigs are on pasture, but by fall the animals have attained a weight of 110 to 140 pounds and are ready for making maximum gains on the new corn crop. When this practice is followed, more than half the corn used in growing pigs to a marketable weight is from the new crop. This method of feeding, therefore, may be used to advantage by the man who wishes to convert his new corn crop into pork as quickly as possible. The fact, however, that pigs fed in this way during the summer are usually sold on a low December or January market should also be borne in mind in considering the advisability of this method of feeding.

Of the pigs that had been on blue grass and sweet clover during the summer, those that had received tankage averaged 8 and 11 pounds, more, respectively, when taken from pasture, than did those that had received only corn. Of the pigs that had been on rape, those that had had tankage averaged one pound less in weight than those which had received only corn. During the period in the dry lot, all pigs which had been fed tankage on pasture made more rapid gains and consumed less concentrates than the corresponding lots which had not received tankage. As an average of the entire experiment, the total amounts of feed required to produce 100 pounds gain were from 20 to 29 pounds less in the lots fed tankage during the summer than in those not fed tankage.

FEEDING OF DIFFERENT AMOUNTS OF CORN, WITH TANKAGE ADDED, FOR PIGS ON PASTURE

Eight lots of pigs were placed on experiment June 11, 1917, to determine the value of different amounts of corn and of the addition of tankage to the rations of pigs on pasture. On June 25 two more lots were added to the experiment. The pigs averaged 43 to 47 pounds in weight. The lots were made up of eight pigs each with the exception of Lots 15, and 16, in each of which were sixteen pigs. The pastures used were rape, alfalfa, field peas and oats, and soybeans. While on pasture the pigs in the various lots were fed as follows:

Lot 7. Rape pasture: no concentrates
Lot 8. Rape pasture: one-third[1] ration corn
Lot 9. Rape pasture: two-thirds ration corn
Lot 10. Rape pasture: corn and tankage self-fed

Lot 11. Alfalfa pasture: no concentrates
Lot 12. Alfalfa pasture: one-third ration corn
Lot 13. Alfalfa pasture: two-thirds ration corn
Lot 14. Alfalfa pasture: corn and tankage self-fed

Lot 15. Field peas and oats, rape and soybean pasture: one-third ration corn
Lot 16. Field peas and oats, rape and soybean pasture: two-thirds ration corn

RAPE AND ALFALFA PASTURES

The rape was sown and handled as described under the first experiment. The alfalfa pasture was in its second year's growth.

The two attempts to carry pigs through the summer without grain (the one lot on rape pasture and the other on alfalfa) were unsuccessful. After two weeks, during which time the corn was gradually reduced, no grain whatever was fed. During the following eight weeks which the pigs were kept on experiment, those on rape gained an average of 5.2 pounds each and those on alfalfa, 3.38 pounds each. Two of the pigs on rape died a short time before these lots were discontinued, apparently from starvation. At the end of the eight weeks the remaining pigs in both lots were fed a grain ration and developed economically to marketable weight. It is doubtful if many of these pigs would have lived through the entire summer without grain, altho those on alfalfa might have survived had the pasture been particularly good. However, the loss of part of the pigs and the small gains of the others made it inadvisable to continue the experiment longer.

[1] One and one-half pounds of corn daily per 100 pounds live weight, which is about one-third as much as the pigs would have consumed.

On October 15 the pigs were removed from pasture to the dry lot. The ration of corn for those pigs which had received a limited ration was increased gradually to full feed with an addition of .4 pound tankage daily per pig. This method of feeding is comparable to the general farm practice of pushing pigs to a marketable weight as soon as the new corn is available. The self-fed pigs were continued on a ration of corn and tankage in the self-feeder. The results obtained in the experiment are reported in Table 2.

The pigs which had been self-fed throughout the experiment were ready for market a month sooner in the case of those that had been on rape (Lot 10), and one and one-half months sooner in the case of those that had been on alfalfa pasture (Lot 14), than were the pigs in the lots which had received a two-thirds ration of corn on pasture and were full-fed in the dry lot in the fall. The medium and the self-fed rations of concentrates given the pigs on both the rape and the alfalfa pastures produced more rapid gains and produced them on fewer pounds of concentrates than did the light rations. The lots which had received a two-thirds ration of corn during the summer both reached a market weight sooner than the lots which had received a one-third ration of corn.

During the forage season the light-fed pigs made the most economical gains, but the total concentrates required to develop these pigs to a marketable weight was much larger than was required in either the lots which had received a two-thirds ration of corn or the lots which had been self-fed corn and tankage. It should be remembered that the longer pigs have to be fed in the dry lot in the fall and winter, the greater is the offset to cheap summer feeding.

While the pigs which had been fed a two-thirds corn ration required a greater amount of concentrates, per 100 pounds gain, than was required by the lots which had been self-fed, their gains were less costly, because of the fact that these lots had not been fed tankage during the summer, as had the lots which had been self-fed. However, the higher cost of the concentrates required by the self-fed lots was in reality slight, and in farm operations such an increased cost is usually offset by the more favorable selling price brought on the earlier market by self-fed pigs. In general it may be said that full-fed pigs which have access to forage until the time of marketing, make their gains on less concentrates than do pigs which are fed a medium ration of corn on forage during the summer and are later fattened in the dry lot. The economy of the gains will depend somewhat on the amount of protein feeds used.

The feeding of medium rations, in addition to its saving in protein supplements, may have an advantage over full feeding in that a greater proportion of the corn fed is from the new crop (note the

following figures). However, as the prices of corn and hogs vary, either full rations or medium may become the more profitable.

PROPORTION OF CORN FED BEFORE AND AFTER OCTOBER 15: EXPERIMENTS ON RAPE AND ALFALFA LOTS, 1917

Ration fed during the summer	*How fed*	*Amount fed previous to Oct. 15*	*Amount fed after Oct. 15*
		percentage	*percentage*
Corn and tankage.....	Self-fed	81	19
Corn two-thirds ration..	Hand-fed	42	58
Corn one-third ration...	Hand-fed	19	81

Little difference was found between either the rate or the economy of gains made on rape pasture and those made on alfalfa. The rape pasture was slightly superior.

The poor results obtained in Lots 8 and 12 were partly due to the extremely severe weather of December and January.

FIELD PEAS AND OATS, RAPE AND SOYBEAN PASTURES

The thirty-two pigs in Lots 15 and 16, which were fed light and medium corn rations, respectively, were turned on various pasture crops during the summer. Until July 16, the pigs in each lot were pastured on a half-acre of Canadian field peas and oats. At that time they were turned into rape pasture, each lot being given access to one-fourth of an acre, in order that their former pasture might be seeded to rape. On August 20, when this seeding had made a good growth, the pigs were turned back into their original pasture. On September 22 each lot of pigs was turned into a half-acre pasture of soybeans. These soybeans, having been broadcast in April, were well podded and furnished good feed until October 15, when the pigs were removed to the dry lot. The corn rations were then increased to full feed and .4 pound tankage per pig per day was given.

As on the rape and alfalfa pastures, the lot given a one-third ration of corn during the summer, Lot 15, required considerably more concentrates per 100 pounds gain than did the lot given a two-thirds ration, Lot 16. Lot 15 required somewhat smaller amounts of concentrates, per hundred pounds gain, than did the lots which had received the same amount of grain on rape and alfalfa pastures (Lots 8 and 12). The pigs in Lot 16, however, required somewhat more concentrates per hundred pounds gain than did the lots which had received the same corn ration on rape and on alfalfa pastures (Lots 9 and 13). These two lots, Nos. 15 and 16, required the use of a greater acreage of pasture than did the lots on rape and alfalfa and caused the extra cost and trouble of furnishing the several forages.

TABLE 2.—DIFFERENT AMOUNTS OF CORN, WITH TANKAGE ADDED, FOR PIGS ON PASTURE
Experiment begun on June 11, 1917.[1] Pigs changed from pasture to dry lot on October 15.

Lot No.	7	8	9	10	11	12	13	14	15	16
Number of pigs	8[3]	8	8[4]	8	8	8[5]	8[6]	8	16[7]	16
Days on experiment	56	231	182	147	56	210	196	147	231	203
Experiment ended	Aug. 20	Jan. 28	Dec. 10	Nov. 5	Aug. 20	Jan. 7	Dec. 24	Nov. 5	Jan. 28	Dec. 31
Forage, ½ acre per lot[2]	Rape	Rape	Rape	Rape	Alfalfa	Alfalfa	Alfalfa	Alfalfa	Field peas and oats; rape; soybeans	Field peas and oats; rape; soybeans
Ration on pasture	No grain	Corn ⅓ ration	Corn ⅔ ration	Corn and tankage in self-feeder	No grain	Corn ⅓ ration	Corn ⅔ ration	Corn and tankage in self-feeder	Corn ⅓ ration	Corn ⅔ ration
Ration in dry lot	Corn, full fed, and .4 lb. tankage daily per pig									

[1]Lots 7 and 11 were started on experiment June 25.
[2]Excepting Lots 15 and 16, which had 1¼ acres.
[3]Pig died Aug. 11, weight 44 lbs. Pig died Aug. 14, weight 32 lbs.
[4]Pig died Aug. 20, weight 63 lbs.
[5]Pig taken out July 18, weight 42 lbs., replaced by pig weighing 44 lbs.
[6]Two pigs taken out Nov. 27, weights 229 and 205 lbs.
[7]Pig died June 25, weight 33 lbs., replaced by pig weighing 35 lbs. Pig died Sept. 2, weight 35 lbs. Pig taken out Nov. 27, weight 168 lbs.

TABLE 2.—*Continued*

Feeds Consumed and Gains Throughout Experiment, in Both Pasture and Dry-Lot Periods

Lot No.	7	8	9	10	11	12	13	14	15	16
Average weight per pig	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*
Initial weight	47.63	44	45	45	46.25	44	45	45	43	45
Weight on Oct. 15	.....	93	141	200	.....	88	141	203	98	135
Final weight	52.83	237	232	222	49.63	223	240	222	231	230
Gain										
Total gain per lot	12	1549	1332	1421	27	1429	1515	1415	2746	2962
Average daily gain per pig	.03	.84	.99	1.21	.06	.85	1.00	1.20	.79	.91
Concentrates consumed per lot										
Corn	.....	7056	5474	5144	.....	7043	6136	5276	12012	12378
Tankage	.....	336	157	435	.....	384	209	508	605	387
Total	.....	7392	5631	5579	.....	7427	6345	5784	12617	12765
Average daily ration per pig										
Corn	.....	3.82	4.07	4.37	.....	4.19	4.05	4.49	3.45	3.81
Tankage	.....	.18	.12	.37	.....	.23	.14	.43	.17	.12
Total	.....	4.00	4.19	4.74	.....	4.42	4.19	4.92	3.62	3.93
Concentrates per 100 pounds gain										
Corn	.....	455	411	362	.....	493	405	373	437	418
Tankage	.....	22	12	31	.....	27	14	36	22	13
Total	.....	477	423	393	.....	520	419	409	459	431
Hay removed per acre, *lbs.*	.....	.....	.....	.....	3040	2140	3700	3480	.....	.....

FEEDING OF DIFFERENT AMOUNTS OF CORN, WITH MIDDLINGS AND TANKAGE ADDED, FOR PIGS ON PASTURE

RAPE PASTURE

Six lots of eight pigs each were started on experiment on June 15, 1918, in order to determine the value of different amounts of corn and the addition of middlings and tankage to the rations while the pigs were on pasture. The average weights of the pigs were 38 to 40 pounds. The various lots were all placed on rape pasture and were fed as follows:

Lot 17. Rape pasture: no concentrates
Lot 18. Rape pasture: one-third ration corn
Lot 1. Rape pasture: two-thirds ration corn
Lot 19. Rape pasture: corn self-fed
Lot 20. Rape pasture: corn and tankage self-fed
Lot 21. Rape pasture: corn, tankage, and middlings self-fed

As in the test of the previous year, it was found impractical to carry young pigs through the summer without grain. For two weeks the corn fed to Lot 17 was gradually reduced and for the next eight weeks none whatever was fed. The average gain per pig for the eight weeks was 1¼ pounds. With the coarser, older forage at that time and the low condition of the pigs, it was thought advisable to discontinue the lot at the end of the eight weeks, as it was obvious that some of the pigs would not live through the summer without grain.

On October 5 the remaining lots of pigs were put in the dry lot and all given corn and tankage in the self-feeder. The pigs in Lot 21 were self-fed middlings in addition, as before. The lots were discontinued when an approximate weight of 225 pounds had been reached. The data are reported in Table 3.

The pigs which had been fed a one-third ration of corn during the summer (Lot 18) made lower daily gains than the pigs which had been fed the two-thirds ration (Lot 1). The gains, however, required 9 pounds less corn and 6 pounds less tankage per 100 pounds. Both of these lots required more total concentrates (410 and 425 pounds) to produce 100 pounds of gain than did the self-fed lots, which required 395, 375, and 398 pounds. The difference between the requirements of the pigs which had been fed a light ration and those which had been self-fed corn and tankage was less pronounced in this experiment than in the experiment reported in Table 2, altho the difference between a medium corn ration and a self-fed corn and tankage ration was greater in this experiment. The pigs self-fed corn and tankage

TABLE 3.—DIFFERENT AMOUNTS OF CORN, WITH TANKAGE AND MIDDLINGS ADDED IN SELF-FEEDER, FOR PIGS ON PASTURE

Experiment begun on June 15, 1918.[1] Pigs changed from pasture to dry lot on October 5.

Lot No.	17	18	1	19	20	21
Number of pigs	8[2]	8[3]	8	8[4]	8[5]	8
Days on experiment	56	214	210	179	168	154
Experiment ended	Aug. 24	Jan. 15	Jan. 11	Dec. 11	Nov. 30	Nov. 16
Forage, ½ acre per lot	Rape	Rape	Rape	Rape	Rape	Rape
Ration on pasture	No grain	Corn ⅓ ration	Corn ⅔ ration	Corn in self-feeder	Corn and tankage in self-feeder	Corn, tankage, middlings, in self-feeder
Ration in dry lot	Corn and tankage in self-feeder					
Feeds Consumed and Gains Throughout Experiment, in Both Pasture and Dry-Lot Periods						
Average weight per pig	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*
Initial weight	40	39	39	38	39	38
Weight on Oct. 5	.....	83	123	123	154	160
Final weight	41.25	229	231	228	240	224
Gain						
Total gain per lot	10	1369	1540	1325	1511	1481
Av. daily gain per pig	.02	.83	.92	1.00	1.13	1.20
Concentrates consumed per lot						
Corn	.....	5251	6060	4872	5129	4611
Tankage	.....	360	492	359	530	463
Middlings	.....	.....	.....	.....	.....	822
Total	.....	5611	6552	5231	5659	5896
Average daily ration per pig						
Corn	.....	3.18	3.61	3.69	3.83	3.74
Tankage	.....	.22	.29	.27	.40	.38
Middlings	.....	.....	.....	.....	.....	.67
Total	.....	3.40	3.90	3.96	4.23	4.79
Concentrates per 100 pounds gain						
Corn	.....	384	393	368	340	311
Tankage	.....	26	32	27	35	31
Middlings	.....	.....	.....	.....	.....	56
Total	.....	410	425	395	375	398

[1]Lot 17 was started on experiment June 29.
[2]Pig died Aug. 19, weight 24 lbs.
[3]Pig taken out Nov. 16, weight 80 lbs.
[4]Pig taken out Aug. 23, weight 33 lbs.
[5]Pig died Nov. 25, weight 138 lbs.

required 340 pounds of corn and 35 pounds of tankage for each 100 pounds gain, the lowest total requirements of any of the lots. The pigs which had been self-fed corn alone during the summer were second lowest in amount of concentrates consumed per 100 pounds gain.

The pigs which made the most rapid gains were those that had received middlings in the self-feeder in addition to corn and tankage. The addition of middlings to a ration of corn and tankage will usually increase both the rate and cost of gains. The increased cost, however, may be offset by the advantages of an early marketable weight.

A rather wide range in the time of marketing is shown in this experiment. The pigs fed a one-third ration of corn during the summer (Lot 18) finished to 229 pounds in 214 days (January 15); whereas the pigs which were self-fed corn, tankage, and middlings (Lot 21) averaged 224 pounds in 154 days (November 16).

It will be seen here that considerably more tankage per 100 pounds gain was consumed by the lots that had received a limited corn ration during the summer than was the case in the experiments reported in Table 2. This difference was due to the fact that the pigs in this experiment (Table 3) were self-fed their tankage in the dry lot while those reported in Table 2 were hand-fed .4 pound daily per pig.

CORN AND TANKAGE IN THE SELF FEEDER, FOR PIGS ON VARIOUS PASTURE CROPS

In 1914, a four-year series of experiments was begun in order to determine whether pigs can be grown satisfactorily on pasture when given corn and tankage in the self-feeder, and also to obtain data on the comparative value of alfalfa and rape as forage for pigs.

ALFALFA AND RAPE PASTURES: 1914 EXPERIMENT

Five lots of pigs, averaging 45 and 46 pounds in weight, were placed on experiment June 5, 1914. Six pigs were fed in each lot instead of the usual eight. The lots were fed throughout the experiment as follows:

Lots 22 and 23. Alfalfa pasture: corn and tankage self-fed
Lots 24 and 25. Rape pasture: corn and tankage self-fed
Lot 26. Dry lot: corn, tankage, middlings, and bran hand-fed

The alfalfa pasture had been seeded the previous year and furnished an abundance of forage. The rape was seeded and handled as has been heretofore described (see pages 40 and 41).

The experiment was continued until November 6, 154 days, at which time the pigs in the various lots had reached average weights of 235 to 269 pounds. (See Table 4.)

The pigs which were self-fed on pasture made more rapid daily gains than the hand-fed pigs in the dry lot and required less concentrates for 100 pounds gain.

The pigs on alfalfa made slightly more rapid gains, on the average, than those on rape and required less feed per 100 pounds gain. This fact would indicate that the alfalfa was somewhat more valuable for

TABLE 4.—CORN AND TANKAGE IN THE SELF-FEEDER, FOR PIGS ON PASTURE: 1914
Experiment begun on June 5, 1914; ended on November 6.

Lot No.	22	23	24	25	26
Number of pigs	6	6	6	6	6
Days on experiment	154	154	154	154	154
Forage, ½ acre per lot	Alfalfa	Alfalfa	Rape	Rape	None
Ration throughout experiment	Corn and tankage in self-feeder				Corn, tankage, middlings, bran, hand-fed
Average weight per pig	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*
Initial weight	46	45	46	45	46
Final weight	254	269	236	260	235
Gain					
Total gain per lot	1248	1342	1142	1288	1135
Average daily gain per pig	1.35	1.45	1.24	1.39	1.23
Concentrates consumed per lot					
Corn	4256	4300	4070	4225	2750
Tankage	375	376	338	375	467
Middlings	.....	.....	.....	.....	1268
Bran	.....	.....	.....	.....	287
Total	4631	4676	4408	4600	4772
Average daily ration per pig					
Corn	4.60	4.65	4.40	4.57	2.97
Tankage	.41	.41	.37	.41	.51
Middlings	.....	.....	.....	.....	1.37
Bran	.....	.....	.....	.....	.31
Total	5.01	5.06	4.77	4.98	5.16
Concentrates per 100 pounds gain					
Corn	341	320	356	328	242
Tankage	30	28	30	29	41
Middlings	.....	.....	.....	.....	112
Bran	.....	.....	.....	.....	25
Total	371	348	386	357	420
Hay removed per acre, *lbs.*	2320	3100	.....	.....	.....

the pigs than rape. The alfalfa was cut for hay twice during the summer, thus furnishing more young, growing forage than was furnished by the rape. Alfalfa supplies a maximum amount of growing forage and will withstand pasturing when about half the annual hay crop is removed in two cuttings during the summer.

In this first trial, the self-feeder on pasture proved very satisfactory for finishing pigs for the early market.

ALFALFA AND RAPE PASTURES: 1915 EXPERIMENT

In 1915 the above experiment was duplicated on the same pasture lots except that no pigs were fed in the dry lot. Since it had been shown the previous year that the forage had a greater carrying capacity, seven pigs were used per half-acre instead of six. The pigs in the various lots were fed as follows:

Lots 27 and 28. Alfalfa pasture: corn and tankage self-fed
Lots 29 and 30. Rape pasture: corn and tankage self-fed

The pigs were placed on experiment June 10, 1915, at average weights of 48 to 50 pounds. They were continued on experiment until November 11, 154 days, the same length of time as the experiment of the preceding year. At that time they had reached average weights of 215 to 248 pounds. The data are reported in Table 5.

The gains made were slower than in the preceding year. The daily gains made on alfalfa, 1.29 and 1.24 pounds per pig, were again greater than those made on rape, 1.09 and 1.13 pounds, and again required less concentrates, as an average. More corn was consumed per 100 pounds gain this year than had been consumed the previous year, but the tankage required was sufficiently less to offset the cost of this increase, and as a result there was little difference in the economy of gains in the two years.

RED CLOVER, ALFALFA, AND RAPE PASTURES: 1916 EXPERIMENT

On June 17, 1916, pigs averaging 49 pounds in weight were started on experiment on the same alfalfa and rape pastures that had been used in 1915. In addition, one lot of pigs was fed on an adjoining red-clover pasture. Each lot was made up of eight pigs. The rations given throughout the experiment were as follows:

Lot 31. Red clover pasture: corn and tankage self-fed
Lots 32 and 33. Alfalfa pasture: corn and tankage self-fed
Lots 34 and 35. Rape pasture: corn and tankage self-fed

At the end of 112 days, October 7, when the experiment was closed, the pigs averaged from 166 to 185 pounds in weight.

TABLE 5.—CORN AND TANKAGE IN THE SELF-FEEDER, FOR PIGS ON PASTURE: 1915
Experiment begun on June 10, 1915; ended on November 11.

Lot No.	27	28	29	30
Number of pigs	7	7[1]	7	7[2]
Days on experiment	154	154	154	154
Forage, ½ acre per lot	Alfalfa	Alfalfa	Rape	Rape
Ration throughout experiment	Corn and tankage in self-feeder			
Average weight per pig	*lbs.*	*lbs.*	*lbs.*	*lbs.*
Initial weight	48	49	48	50
Final weight	247	248	215	229
Gain				
Total gain per lot	1388	1335	1170	1135
Average daily gain per pig	1.29	1.24	1.09	1.13
Concentrates consumed per lot				
Corn	4767	4654	4200	3906
Tankage	322	347	336	269
Total	5089	5001	4536	4175
Average daily ration per pig				
Corn	4.42	4.32	3.90	3.88
Tankage	.30	.32	.31	.27
Total	4.72	4.64	4.21	4.15
Concentrates per 100 pounds gain				
Corn	344	349	359	344
Tankage	23	26	29	24
Total	367	375	388	368
Hay removed per acre, *lbs.*	4410	4060	.....	.....

[1]Two pigs taken out June 29, weights 52 and 50 lbs., replaced by pigs weighing 81 and 80 lbs.
[2]Pig died Aug. 30, weight 114 lbs.

The amounts of clover and alfalfa hay removed per acre, as shown in Table 6, would indicate that there was a good growth of forage. This was true, however, only in the early part of the season. The hot, dry weather during the late summer, together with the fact that there were too many pigs for the pasture, made it necessary to take them from the forage sooner than had been planned. The stand of alfalfa had been reduced one-half in the three years of pasturing.

The pigs in the clover field made the most rapid gains, but they consumed more concentrates daily and per 100 pounds gain than did the pigs in the other lots. The fact that the clover was the first of the forage crops to become exhausted may account, in part, for the fact that the pigs in that lot consumed more corn than did those in the other lots. The average rate and economy of gains for pigs on alfalfa and on rape pastures were about the same.

TABLE 6.—CORN AND TANKAGE IN THE SELF-FEEDER FOR PIGS ON PASTURE: 1916
Experiment begun on June 17, 1916; ended on October 7.

Lot No.	31	32	33	34	35
Number of pigs	8	8	8[1]	8[2]	8
Days on experiment	112	112	112	112	112
Forage, ½ acre per lot	Red clover	Alfalfa	Alfalfa	Rape	Rape
Ration throughout experiment	Corn and tankage in self-feeder				
Average weight per pig	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*
Initial weight	49	49	49	49	49
Final weight	185	179	176	171	166
Gain					
Total gain per lot	1088	1036	863	982	931
Average daily gain per pig	1.21	1.16	1.03	1.10	1.04
Concentrates consumed per lot					
Corn	3699	3195	2929	3313	3092
Tankage	267	293	207	260	229
Total	3966	3488	3136	3573	3321
Average daily ration per pig					
Corn	4.13	3.56	3.49	3.73	3.45
Tankage	.30	.33	.25	.29	.26
Total	4.43	3.89	3.74	4.02	3.71
Concentrates per 100 pounds gain					
Corn	340	309	339	337	332
Tankage	25	28	24	27	25
Total	365	337	363	364	357
Hay removed per acre, *lbs.*	4288	4510	4750	.....	.....

[1]Pig died Aug. 11, weight 25 lbs.
[2]Pig taken out Sept. 30, weight 177 lbs.

ALFALFA, RAPE, AND SWEET-CLOVER PASTURES: 1917 EXPERIMENT

On June 11, 1917, pigs averaging 44 and 45 pounds in weight were started on experiment. This year the pastures were different from those used in the three previous tests. Lots of eight pigs each were fed on alfalfa, rape, sweet clover, and in the dry lot as follows:

Lot 14. Alfalfa pasture: corn and tankage self-fed
Lot 10. Rape pasture: corn and tankage self-fed
Lot 36. Sweet clover pasture: corn and tankage self-fed
Lot 37. Dry lot: corn and tankage self-fed

On October 15, the pigs on pasture were removed to the dry lot, where the self-feeding of corn and tankage was continued. No change was made in Lot 37. All the pigs were grown to a weight of about 225 pounds. The data are reported in Table 7.

TABLE 7.—CORN AND TANKAGE IN THE SELF-FEEDER, FOR PIGS ON PASTURE: 1917
Experiment begun on June 11, 1917. Pigs changed from pasture to dry lot October 15.

Lot No.	14	10	36	37
Number of pigs	8	8	8[1]	8
Days on experiment	147	147	140	140
Experiment ended	Nov. 5	Nov. 5	Oct. 29	Oct. 29
Forage, ½ acre per lot	Alfalfa	Rape	Sweet clover	None
Ration throughout experiment	Corn and tankage in self-feeder			
Average weight per pig	*lbs.*	*lbs.*	*lbs.*	*lbs.*
Initial weight	45	45	44	45
Weight on Oct. 15	203	200	214	207
Final weight	222	222	224	225
Gain				
Total gain per lot	1415	1421	1265	1443
Average daily gain per pig	1.20	1.21	1.20	1.29
Concentrates consumed per lot				
Corn	5276	5144	4721	5147
Tankage	508	435	538	697
Total	5784	5579	5259	5844
Average daily ration per pig				
Corn	4.49	4.37	4.50	4.60
Tankage	.43	.37	.51	.62
Total	4.92	4.74	5.01	5.22
Concentrates per 100 pounds gain				
Corn	373	362	373	357
Tankage	36	31	43	48
Total	409	393	416	405
Hay removed per acre, *lbs.*	3480	.....	2200	.....

[1]Pig taken out August 20, weight 45 lbs.

As an average of the previous three years' experiments, the pigs on alfalfa made slightly more rapid gains on less concentrates than those pastured on rape. In this experiment, less concentrates were consumed, per 100 pounds gain, by pigs on rape than by pigs on alfalfa. On sweet clover the concentrate requirement per 100 pounds gain was somewhat greater than on either alfalfa or rape; the small differences in daily gains are within the limits of experimental error and are not significant. The luxuriant growth of sweet clover the first year makes it a crop worthy of consideration for pasturing pigs. When sown about the first of April under optimum conditions, sufficient forage is secured by the first of June for pasturing and a good growth is available all summer.

The pigs which were fed in the dry lot throughout the entire experiment (Lot 37) made more rapid gains than the pigs which had

been on forage during the summer. The total amount of concentrates required for 100 pounds gain was about the same for all the pigs, but those which had been in the dry lot during the summer consumed somewhat more tankage than the pigs which had been on forage.

SUMMARY OF FOUR YEARS' EXPERIMENTS WITH CORN AND TANKAGE IN THE SELF-FEEDER, FOR PIGS ON ALFALFA AND RAPE PASTURES

The averages appearing in Table 8, in which is presented a summary of the data contained in Tables 4 to 7 on rape and alfalfa pastures, would seem to indicate that the use of the self-feeder on pasture is a satisfactory way of growing pigs for the fall and early winter market. Altho this method involves the use of much old corn, it usually means that the pigs can be sold on an early market before they require much shelter from cooler and damper weather.

TABLE 8.—SUMMARY OF EXPERIMENTS WITH CORN AND TANKAGE IN THE SELF-FEEDER, FOR PIGS ON ALFALFA AND RAPE PASTURE: DATA FROM TABLES 4 TO 7

Average of 7 lots	Nos. 22, 23, 27, 28 32, 33, 14	Nos. 24, 25, 29, 30, 34, 35, 10
Number of pigs	50	50
Days on experiment	138	138
Forage	Alfalfa	Rape
Ration	Corn and tankage in self-feeder	
Average weight per pig	*lbs.*	*lbs.*
Initial weight	47	48
Final weight	225	212
Gain		
Total gain	8 627	8 069
Average daily gain per pig	1.25	1.17
Concentrates consumed		
Corn	29 377	27 950
Tankage	2 428	2 242
Total	31 805	30 192
Average daily ration per pig		
Corn	4.25	4.05
Tankage	.35	.33
Total	4.60	4.38
Concentrates per 100 pounds gain		
Corn	341	346
Tankage	28	28
Total	369	374
Hay removed per acre, *lbs.*	3804	.....

The data indicate that, on the whole, alfalfa pasture was superior to rape pasture for pigs. Altho alfalfa is more difficult and expensive to seed than rape, it should be borne in mind that it will survive for a number of years, while the ground for rape must be prepared and the seed sown each year. Alfalfa, moreover, produces from one to two tons of hay yearly per acre in addition to the pasture, while rape produces no hay. However, in feeding value for pigs, rape compares more favorably with alfalfa than is commonly thought. If it is seeded in the spring as early as the ground can be worked and if it is not pastured too closely during the early part of the summer, it will usually give an abundance of forage by the first of June, and under the climatic conditions of central and northern Illinois can be pastured until the killing frosts.

ONE vs. TWO PASTURE CROPS FOR PIGS

Experience and experimental work have taught that pigs usually do better when fed a variety of concentrates than when fed but one. In order to ascertain whether the same is true with regard to forage crops, three experiments were carried out, the first in the summer of 1911 and the other two in the summer of 1915. The various lots of pigs were placed in pastures growing two forage crops, alfalfa in one half and rape in the other, and also in pastures of rape alone and alfalfa alone. They were fed as follows:

1911 Lot 38.[1] Alfalfa pasture: two-thirds ration corn
Lot 39. Alfalfa and rape pasture: two-thirds ration corn

1915 Lot 40. Alfalfa pasture: two-thirds ration corn and ¼ pound tankage daily per pig
Lot 41. Alfalfa and rape pasture: two-thirds ration corn and ¼ pound tankage daily per pig

1915 Lot 42. Rape pasture: two-thirds ration corn and ¼ pound tankage daily per pig
Lot 43. Rape and alfalfa pasture: two-thirds ration corn and ¼ pound tankage daily per pig

At the end of the pasture season these pigs were taken off experiment. At this time, they were ready to be fattened, their weights ranging from 145 to 170 pounds. The daily gains were not large, but considering the fact that they were made on limited grain rations, they were quite satisfactory.

From a study of the data, there seems to be no advantage in combining these two forage crops. The results from Lots 38 and 39

[1] Lots 38 and 39 were handled under the direction of William Dietrich.

TABLE 9.—ONE VS. TWO PASTURE CROPS FOR PIGS

Lots 38 and 39 placed on experiment June 5, 1911; Lots 40 and 41, on June 10, 1915; Lots 42 and 43, on June 12, 1915.

Lot No.	38	39	40	41	42	43
Number of pigs	10	10	12[1]	12[2]	14[3]	14[4]
Days on experiment	154	154	154	154	154	154
Experiment ended	Nov. 6	Nov. 6	Nov. 11	Nov. 11	Nov. 13	Nov. 13
Forage, 1 acre per lot	Alfalfa	Alfalfa and rape	Alfalfa	Alfalfa and rape	Rape	Rape and alfalfa
Ration throughout experiment	Corn ⅔ ration		Corn ⅔ ration; tankage ¼ lb. per pig daily		Corn ⅔ ration; tankage ¼ lb. per pig daily	
Average weight per pig	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*
Initial weight	45	45	34	34	32	32
Final weight	170	161	159	159	145	151
Gain						
Total gain per lot	1249	1161	1416	1483	1495	1512
Av. daily gain per pig	.81	.75	.78	.80	.69	.73
Concentrates consumed per lot						
Corn	4199	4199	4647	4849	4978	4966
Tankage	.....	.....	453	460	540	515
Total	4199	4199	5100	5309	5518	5481
Average daily ration per pig						
Corn	2.73	2.73	2.55	2.62	2.31	2.40
Tankage	.....	.....	.25	.25	.25	.25
Total	2.73	2.73	2.80	2.87	2.56	2.65
Concentrates per 100 pounds gain						
Corn	336	362	328	327	333	329
Tankage	.....	.....	32	31	36	34
Total	336	362	360	358	369	363
Hay removed per acre, *lbs.*	3205	1500[5]	3720	2115[5]	.....	2150[5]

[1]Pig taken out Oct. 14, weight 71 lbs.
[2]Pig died June 29, weight 25 lbs., replaced by pig weighing 35 lbs.
[3]Two pigs taken out July 31, weights 63 and 27 lbs., replaced by pigs weighing 80 and 95 lbs.
[4]Pig died Sept. 1, weight 66 lbs. Pig died Oct. 26, weight 87 lbs.
[5]Taken from one-half acre of alfalfa.

(Table 9), which were fed no tankage, favor the alfalfa rather than the alfalfa and rape pasture both in rapidity and in economy of gains. In Lots 40 and 41, which were fed some tankage in addition to corn, the results favored very slightly the combined forages. A comparison of the results from Lots 42 and 43, also fed some tankage in addition to corn, would make it appear that a combination of pasture crops is beneficial. The fact that alfalfa and rape made a better showing than rape alone, however, might be due to the superi-

ority in feeding value of alfalfa over rape rather than to the benefit of using two forage crops. An average of these two years' work would indicate that there is no marked benefit in the use of more than one of these pasture crops at a time.

CARRYING FALL PIGS THROUGH THE SUMMER ON PASTURE

HEAVY, FAT PIGS

Twenty pigs of fall farrow were started on experiment on June 12, 1915, in order to obtain data on the question whether it is advisable to feed heavy, fat pigs during the summer on pasture. At the time the experiment was started these pigs were in condition for market, averaging 247 pounds each in weight. They were kept on experiment until September 4.

Until July 31 the pigs were pastured on one-half acre of oats and Canadian field peas and one-half acre of rye. Afterwards they were pastured on an acre of blue grass. Throughout the experiment they were given a full ration of corn and ½ pound tankage daily per pig.

These pigs would not consume as much corn after being turned on pasture as they had consumed previously, and required more concentrates to produce 100 pounds gain than they had in the dry lot during the spring. Throughout the hot weather they were rather difficult to keep on feed and gaining well. For greatest profit they should have been sold in early summer. The slow daily gains, an average of .94 pound, and the high consumption of corn and tankage per 100 pounds gain, 567 pounds, made it very apparent that such hogs should not be held for any length of time during the summer unless a more favorable market is fairly certain. (See Table 10.)

LIGHT, THIN PIGS

The question sometimes arises as to whether or not light, thin, fall-farrowed pigs, which in some years would be discounted on the spring market, may be carried through the summer on pasture with a little grain and sold at a profit in September or October. In order to obtain data on this problem, fifteen pigs were carried through the summer on rape pasture. From June 10 until August 19, or during the first seventy days, they were fed 1⅓ pounds of corn daily per head. During the remaining fifty-six days of the experiment they were fed a full ration of corn and .4 pound of tankage daily per pig.

The rapidity and economy of the gains of these pigs while on a light feed were fairly satisfactory. During this period an average

TABLE 10.—CARRYING FALL PIGS THROUGH THE SUMMER ON PASTURE
Heavy, fat pigs placed on experiment June 12, 1915; light, thin pigs on June 10.

Lot No.	44 Heavy, fat pigs	45 Light, thin pigs
Number of pigs	20	15
Days on experiment	84	126
Experiment ended	Sept. 4	Oct. 14
Forage	See footnote[1]	Rape
Ration	Corn full-fed; tankage ½ lb. per pig daily	1½ lbs. corn per pig daily. After Aug. 19, corn increased to full feed; tankage .4 lb. per pig daily
Average weight per pig	*lbs.*	*lbs.*
Initial weight	247	178
Final weight	327	262
Gain		
Total gain per lot	1585	1250
Average daily gain per pig	.94	.66
Concentrates consumed per lot		
Corn	8144	5780
Tankage	840	216
Total	8984	5996
Average daily ration per pig		
Corn	4.85	3.06
Tankage	.50	.11
Total	5.35	3.17
Concentrates per 100 pounds gain		
Corn	514	463
Tankage	53	17
Total	567	480

[1]One-half acre of oats and Canadian field peas and one-half acre of rye from June 12 to July 31; then changed to one acre of blue grass.

daily gain of .28 pound was made. The concentrate requirement per 100 pounds gain was 473 pounds. The average daily gain for the entire experiment was .66 pound per pig, with a concentrate requirement of 463 pounds of corn and 17 pounds of tankage for 100 pounds gain. (See Table 10.)

The market price of light, thin pigs in the spring is a large factor in determining whether or not it is advisable to carry such pigs through the summer. It is true that in many years the price of the same pigs in the fall at heavier weights would be greater than the price for them at the lighter weights in the spring. However, because of the risk, the extra labor, and the inconvenience in handling, it is better, in ordinary farm practice, to finish fall pigs to 200 or 225 pounds in the spring by generous winter and spring feeding than to hold them through the summer.