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# HOG EXPERIMENT No. 1.

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The result of this experiment shows that 2000 pounds of grain produced  $626\frac{3}{4}$  pounds live weight, or 17.3 pounds of growth for every bushel of corn and equivalent; that we can approximate one dollar per bushel for corn when pork is five and one-half cents per pound; that the dam can be made to increase in flesh during the suckling period; that the proper balancing of the ration is necessary to secure these results.

The object of this experiment is to determine the most profitable development of a litter of pigs and the maintenance of the dam. In other words to produce the greatest possible live weight with a given quantity of grain without detriment to the vigor and constitution of the growing animal. The experiment, therefore, involves two points, namely, increase of flesh and fat in proper balance with increase of bone and skin. The subject is a registered Poland China sow, two years old. She was purchased of W. M. McFadden, West Liberty, Iowa. She scored second in points of excellence at the State Fair one year ago. So we have a good animal to start with. She farrowed March 3, 1891. Her litter consisted of four pigs, three boars and one sow. The pigs and dam were weighed when the pigs were thirty-six hours old. The weight of the pigs, was thirteen and one-fourth pounds; weight of dam, 348 pounds. The weighing was done March 4, at two o'clock P. M. The supplementary feed was prepared by mixing ground barley, oil meal, corn and cob meal and bran, the mixture being soaked thirty-six hours in cold water before feeding. The principal feed was ear corn, and shelled corn soaked. The sow was fed three times a day during the first two periods and twice a day thereafter. During the cold weather of March she was kept in a tight pen, which was

warmed by a stove in an adjacent pen. As soon as grass came she was turned into a creek pasture during the day time. After the hot weather set in, she was placed in a clean, grassy lot; having free circulation of air. The weighing was done regularly on the fourth day of each month, at 2 o'clock P. M. Following is the feed consumed during each period; also the weights and increase:

TABLE OF FEEDS AND WEIGHINGS.

Periods.	Lbs of Oil Meal.	Lbs of Corn and Cob Meal.	Lbs of Barley Meal.	Lbs of Bran.	Lbs of Corn.	Lbs of Beets.	Weights of Pigs.	Increase of Growth of Pigs.	Weights of Dam.	Increase of Weight of Dam.	Total Increase of Live Weight.
1st.	57	42	53	24	*70	25	‡13¼		‡348	+12	
2d.	57	42	53	24	*70	25	182	104½	+382	+20	
3d.	77	77	18	22	*110	00	296	114	+380	-2	
4th.	48	48	00	12	†491	00	394	98	+405	+25	
5th.	00	00	00	00	†675	60	536	142	+450	+45	
	239	209	124	82	1378	50		522¾		+104	+626¾

\*Ear Corn.

†Shelled Corn soaked thirty-six hours in water before feeding.

‡13¼ pounds original weight of pigs.

‡348 pounds original weight of dam.

The amount of feed consumed during the four periods (152 days) is 35.7 bushels reducing (on the money basis) the supplementary feeds to corn. From the table we see that this amount of corn has produced 626¾ pounds of pork or 17.3 pounds per bushel. Ordinarily dry corn fed to sows and pigs without supplementary feed yields about eight pounds of growth to one bushel of corn. Therefore, the extra attention to feed and feeding in this experiment has produced an

increased gain of 9.3 pounds for every bushel of corn. The 7.4 bushels of corn represented in the oil meal, barley meal and bran, increased the digestibility of the feed and assimilative power of the animals so as to effect an increase of 348 pounds of pork from the same quantity of feed. Giving these supplementary feeds their proper credit of 128 pounds we have a balance of 220 pounds resultant of the superinduced digestibility of the corn, by reason of its admixture with proper supplementary feeds. Corn may be fed carelessly, and produce but eight pounds of pork for every bushel ; or it may be fed judiciously, and produce 17.3 pounds. In the case of full grown fattening hogs a still higher yield can be produced. Could we lift the veil that hides the operations of digestion, and see plainly how much food remains undissolved, how much chyle fails of chylication, and how much chyle escapes resorption, it would astonish every farmer in Iowa. Millions of bushels of the yearly corn crop, go out through the excrementitious products to the dung hill ; whereas with the proper feed supplement more of these millions could be converted into the highest priced flesh and fat.

The digestibility of food depends upon the proper balance and palatability of the ration, the quantity of food eaten at a single meal, the thorough breaking up of the slowly digestible seed coats and cell walls of each nutriment, the health and habit of each animal and the activity of the digestive system.

The problem awaiting solution by the Iowa hog raiser, is the determination of the proper supplement for his corn and to make his cheap feed still cheaper, by raising the per cent of digestibility. Digestion coefficients are not fixed quantities. Instead of allowing eighty per cent of the corn fed to waste in digestion, we believe it is possible to assimilate at least forty per cent and convert the assimilated matter into animal tissue. Few of us perhaps are aware of the fact that we are feeding one hundred bushels of corn to get fifteen or twenty bushels of digestible matter. It is a greater benefaction to produce two pounds of flesh instead of one, than to merit that old appause of making two blades of grass grow where one grew before. The farmer may ask : How am I to obtain this supplement or carbohydrate complement ? It is found in the albuminoids of oil meal, ground barley and bran ; in the

legumin of peas and beans ; in the fibrin of meat and fish scrap ; in the fresh pasturage of clover, timothy and blue grass ; in the waste products of creameries and cheese factories and in the kitchen slops of large boarding houses. In the compound of oil meal, barley meal and bran, the barley meal may be substituted by ground wheat or oats or rye.

The 17.3 pounds of growth produced from a bushel of corn shows what great possibilities are locked up in the Iowa hog. He is eminently the great corn condenser of the state. His torpid nature and fat forming function enables him to burn the carbohydrates of corn into bacon. His omnivorous appetite prompts him to gather up all the waste food products of the land and convert them into gold.