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John M. Evvard
Iowa State College

G. B. Glatfelter
Iowa State College

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Saving the Orphan Pigs

Abstract

Countless hundreds of orphan pigs are lost annually in Iowa and other states of the corn belt. When they are saved and reared, it is mostly thru "b'guess and b'gosh" methods, there being usually very little system on the majority of farms in making an attempt to pull them thru. The present loss of orphan pigs can be greatly reduced by following certain feeding and management essentials which are now known.

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SAVING THE ORPHAN PIGS

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C. F. Curtiss, Director
ANIMAL HUSBANDRY SECTION



Ames, Iowa

SAVING THE ORPHAN PIGS

By John M. Evvard and G. B. Glatfelter.

Countless hundreds of orphan pigs are lost annually in Iowa and other states of the corn belt. When they are saved and reared, it is mostly thru "b'guess and b'gosh" methods, there being usually very little system on the majority of farms in making an attempt to pull them thru. The present loss of orphan pigs can be greatly reduced by following certain feeding and management essentials which are now known.

An orphan pig is one that is prematurely weaned from his mother, usually under the age of two months. By far the most orphan pigs, when thus deprived of a mother's beneficent suckling and fostering influence, range from a day to a few weeks in age. The younger the orphaned pig, the greater the problem in its care, feeding and management.

The new-born piggies that lose their mothers before they have had the opportunity of securing the "first milk", or the much thickened and highly specialized colostrum milk, are a much greater problem than those two or three days old or older which have had the advantage of getting a few meals from the sow's udder. It appears that there are important immunizing bodies, the so-called antibodies, in the colostrum or early milkings, which on being transferred to the little porcine new-comers give them a considerable measure of immunity against some of the diseases to which swine are subject.

PROVIDING EARLY MILK FOR THE ORPHANS

Just how to supply the equivalent of the early milk for the little prospective porkers whose colostrum fails them is not yet clear. However, these unfortunate new-comers may be nursed a few times, if possible, on the early milk of other sows that are farrowing at the proper time. Even when the early milk is not available, the placing of these pigs with other sows whose litters are well started is suggested as good practice in the absence of something better. It is well to recognize clearly at the outset that the motherless new-born pig only a few hours old is a hazard which must be accepted and if possible, made the most of. Altho we have successfully raised some of these day-old pigs at the Iowa station thru methods set forth in this circular, yet success is much more certain if the pigs are at least two days old before they are orphaned.

The practices enumerated in this circular are the best that can be offered at this time. At the Iowa station work on the problem of handling the pigs made motherless right at the time of farrow is still under way and in due course we hope to have further suggestions to offer on their care.

THE EXPERIMENTAL WORK AT AMES

Most of the controlled comparative experimental work in the feeding and management of orphaned pigs to date at the Iowa station has been on young pigs a week to ten days old and in a few instances a little older. Pigs of this age were chosen in order to make relatively sure of the continuance, without deaths, of the entire set of individuals in each of the lots in the experiments; these lots, in each separate experiment, were started at one and the same time, and comprised a

comparatively equal division of one or more litters of pigs. The purpose was to determine the relative efficiency of different schemes of feeding, and to work out principles which would be as well applicable to very young pigs a day or two old as to those orphaned when older than a week or ten days. However, the experiments have included practical studies and practices in the saving of litters made orphaned at earlier ages.

Orphaned pigs, if not orphaned too young and in too low a degree of vigor and vitality, are relatively easy to raise if care is taken to do the painstaking work that is necessary for good results. A good many details must be faithfully looked to. Everything must be done about right, because to fail in carrying out any one of the essentials may detract seriously from the results, while if too many are neglected, it may bring disaster to the pigs. But it is surprising how well one will get along with the orphans, how well they will grow and round out to the weaning stage, and how relatively little feed it takes for the pound of gain, when everything goes well.

ORPHAN PIGS OF MARKET GRADE ARE ALSO WORTH SAVING

Naturally the most highly valued orphan pigs, the highly valued pure-breds, are the ones that most commend themselves to the orphan pig raising process, but the orphan pigs intended for the general livestock market are also worth saving. That fact becomes clearer with careful consideration of the probable losses, the feed requirements and the labor needs in swine production.

Losses in raising orphan pigs, taking them at the early age of a week or under, provided that the pigs are strong and favorable subjects at the time they are made orphans, should not under good conditions exceed the losses that on the average will occur if the pigs are allowed to run with the sow. In farm practice generally, sows will farrow about seven to nine pigs each and save to weaning time, approximately four to six. Under better conditions, such as exist in the best purebred herds where much individual attention is given the sows and where they are allowed individual quarters, the number of pigs weaned will run around seven or eight per sow.

Therefore under natural conditions the losses in pigs per sow, under circumstances ranging from the best to the average, vary from about one to three or four pigs out of about eight or nine pigs to the farrowed litter. On the percentage basis these losses range from practically 10 to 40 percent. Surely the losses of orphan pigs raised under suitable conditions need not exceed these figures. The hazard of the mother lying on or otherwise injuring the little fellows is entirely eliminated in the motherless method.

AMOUNT OF FEED REQUIRED

What about the feed required to raise the orphans and about what is the cost? Our experience shows some variations in the feed requirements of the orphan pigs, as there is in the suckling litters, but this is to be expected in all kinds of livestock feeding. However, the feed required for 100 pounds of grain shows the following approximate but rather reliable average: Corn grain, about 100 pounds; meat meal tankage, about 20 pounds; milk, whole, skim, or buttermilk, about 500 pounds; mineral mixture, about two pounds. This is practically 180 pounds of dry matter to 100 pounds of gain made. This is about half

the dry matter that is required to produce 100 pounds of gain in taking the pigs from weaning time until they reach the marketable weight of 225 to 250 pounds.

It is rather a surprising fact that the orphan pigs actually put on gains at a lesser outlay of dry matter per unit of gain than do the combined sow and suckling litter. Actual results on feeding sows and litters show that the dry matter of feed required for 100 pounds of combined sow and litter gain runs about 300 pounds under the very best conditions, which is 120 pounds more than the approximate orphan pig requirement of 180 pounds, or over 65 percent more. The explanation of this phenomenon lies chiefly in the fact that as the pigs gain, the sow loses in weight. The combined gain, therefore, is less than the gain on the pigs, just so much less as the pounds loss of the sow.

Dairymen in the market hog business, who have an excess of skim-milk available for the swine herd, have long since learned and appreciated the advantage accruing from early weaning, say at the age of six or seven weeks. When weaned at that age the pigs do practically as well and the extreme loss of weight on the part of the sow is avoided. Thus, because of the greater cheapness of skimmilk as compared to the cost of the production of sow's milk, the financial gain is obvious.

If the saving of feed dry matter were the only consideration, then the advantage of orphan pig raising, as compared to the natural sow and litter method, would be great. However, there are other considerations and to secure the greatest efficiency in growth, the natural way is better. But if the sow dies, or is unable to suckle her young, then the artificial raising of the orphans commends itself as an opportunity for making something out of an otherwise bad situation. Of course, one should not fail to consider the possibilities of transferring the orphans to other sows, those with available udder and teat capacity, such as have litters of about the same age.

RECORD OF EXPERIMENTAL WORK

Some out of a great many of our experiences in the raising of the little orphan pigs are herewith narrated:

One litter a little over a week old did very well when fed shelled corn in a self-feeder, meat meal tankage of the 60 percent protein grade in still another self-feeder and salt in still another feeder as the dry feeds; in addition each pig received daily a raw egg with a little over a quart of whole milk. Yellow corn is preferable to the white because of the greater fat-soluble vitamin content of the colored corn, the vitamin being essential to the good growth and well-being of the pigs. These pigs gained on the average 0.6 pound a day for the two months, averaging approximately 40 pounds in weight to the pig at the end of that time.

The dry matter required for 100 pounds of gain was approximately 160 pounds. The egg a day given in the milk for a few weeks proved a good thing to start the young pigs off, but the egg is not absolutely essential. The egg is a good carrier of high-class, easily digestible nutrients, more particularly rich in certain minerals, proteins, and vitamins. The juice of an orange a day, or some tomato juice, apparently did about as well as the egg allowance. A little green alfalfa or clover leaves are good when pigs get well started. It is the highly valued purebred orphan pigs that can well pay for these little supplementary luxuries like eggs, and for them the supplying of the juice of an orange or tomato, with or without the egg, is to be seriously considered.

THE VALUE OF MILK BY-PRODUCTS IN ORPHAN FEEDING

Altho whole milk is much preferred to skimmilk or buttermilk, particularly in the first few weeks or month of feeding, yet we have had some very good and rather surprising results in handling the orphans on these two milk by-products after the pigs were nicely started. In one test the buttermilk-fed pigs actually did a little better than the pigs that were fed the whole milk thruout the milk feeding period. This, however, does not disparage the feeding of the whole milk in the least, but rather emphasizes the goodness of the buttermilk under some circumstances of feeding.

The buttermilk-fed pigs in one test made creditable gains, this on 175 pounds of dry matter for each 100 pounds gain made. The total feed requirement in pounds was as follows: Of self-fed shelled corn, practically 125 pounds; self-fed meat tankage, 8 pounds; salt, less than one pound; and buttermilk, 650 pounds. Yellow shelled corn, meat meal tankage, salt or preferably a good mineral mixture, with about a quart of buttermilk or skimmed milk daily, is a combination of feeds than can well form the basis of a good orphan pig ration. Of course, it can be improved by the use of whole milk, particularly during the first few weeks, and by the further additions of the supplemental luxuries hereinbefore designated.

THE COST OF RAISING ORPHAN PIGS

Inasmuch as the new-born pigs represent a rather formidable investment, it becomes a question, when they are orphans, as regards the entire loss of the previous outlay, or a further investment in feed, time, labor and housing in order to protect the original outgo. Even with gilts, the cost of the new-born pig will range from \$1 to \$4, including the feed cost, interest charges, medical attention, housing, loss, depreciation on the pound value of the gilts, boar service and labor. If we put the value of the gilt's newly farrowed pigs at \$2 each, then the litter of seven would be worth \$14. If the orphaned pigs cannot be transferred to another sow, then the proposition presents itself of saving or losing the \$14 capital involved to the date of farrow. To figure the matter more closely, it is now necessary to determine the cost of raising the orphan pigs by hand methods, getting them in good health and weight to the weaning age of about two months.

At the Iowa station it is considered preferable to have the orphan pigs weighing around 40 pounds or a little better before taking the milk from them, or before turning them into the drove of growing pigs. Of course, if skim or buttermilk is plentiful, then we like to continue it, but so often this is not possible. To put 40 pounds of gain on orphan pigs will require, on the basis of the feed requirement figures given approximately the following: Shelled corn, yellow, 40 pounds; meat meal tankage, 8 pounds; whole milk, skimmilk or buttermilk, 200 pounds (of which 40 may be whole milk used in the first few weeks to a month), and minerals, one pound. With corn at 56 cents a bushel, meat meal tankage at \$60 a ton, whole milk at the farm value of about 3 cents a pound, skimmilk and buttermilk at 30 cents a hundred, and the mineral mixture at 5 cents a pound, the total feed cost for the 40 pounds gain is \$2.37 or 5.93 a hundred pounds. If the whole milk is limited to 20 pounds, or about 10 quarts to the pig, which we have found feasible with market pigs, then the cost would be \$1.83 for the feed on the 40-pound pig, which figures \$4.57 a hundred pounds, a most creditable showing.

Even under the best conditions the sow and litter require for 100 pounds of gain at least 300 pounds of corn grain plus 50 pounds of tankage in addition to some minerals and some pasture. On the same scale of prices as those given for the orphan pig feeds, the gains will cost in this natural suckling way between \$4.75 and \$5 00 for 100 pounds, net. At this rate, the feed for the 40-pound pig will cost close to \$2, and remember this is under the very best of conditions. Considering all angles, the feed cost of the 40-pound pig when raised as an orphan should not, under good management, exceed that of the naturally suckled one.

It appears, therefore, that if one has some \$2 tied up in the orphan pig, the further investment of \$2 for feed, or enough to carry that pig to over 40 pounds in weight, probably close to 43 pounds or more when the birth weight and perhaps some subsequent gain following farrowing are included, is a good proposition to consider seriously.

Of course, the highly valued purebred pig that is to be used for the breeding herd can stand more expense than the market pig, just how much depending on the circumstances. At any rate, when it is known that the orphan pigs can be raised successfully and when the hog man has, after some practice, learned how to raise them, then more and more of the orphans will be saved to the breeding as well as the market hog industry.

METHODS USED IN FEEDING

To get the little prospective porkers started in their practical, everyday life is a rather easy matter. The bottle and nipple method of allowing the milk is tedious and laborious, therefore we believe in dispensing with it. The shallow dish is good at the start; later we introduce a shallow trough. The metal troughs, with smooth bottoms, rounded sides and open container are preferred because of their sanitary advantages, they being readily cleaned and scalded. To get the little squealers to drink the milk in the shallow containers has been a simple matter in all cases.

The bottle is not necessary, even at the start. The method is to put a little milk in the container, just enough so that it comes well up on the pig's mouth and bathe his tongue nicely when his nose is on the bottom of the receptacle, and then to take the little fellow by the back of the head and neck in such a manner as easily to push his nose and mouth into the milk, holding him snugly so that he may not wiggle away, but carefully so as not to hurt him. Use a little judgment as to the length of time to keep the pig's nose under the danger line, otherwise strangling may occur.

There is not much more to tell, excepting that a well-taught lesson or two, and seldom more are required, will show the little fellows the way and thereafter they do their own drinking when the milk is provided for them. Really, it is a pleasure to take care of and feed a bunch of husky, vigorous orphan pigs in their tender days. They soon become so active, so determined, so anxious, so friendly, that they inspire one to get up and hustle. But the orphan pig must be well-housed, well-managed and well-fed if he is to prosper properly.

Practical Suggestions on Raising Orphan Pigs

The results of more than five years of experimentation and practical observations and studies in orphan pig raising at the Iowa Agricultural Experiment Station may be summed up in the following practical suggestions:

1. Be Sure to Feed an Adequate Ration.

A ration of one quart of cow's whole milk, hand-fed daily, per pig, plus a standard corn belt ration of mixed shelled corn self-fed, meat meal tankage self-fed, and salt self-fed, gives splendid results in raising orphan pigs. For the hand-fed pigs, yellow corn is given preference over the white in order to insure an abundance of the *fat-soluble A vitamin*. As a matter of fact, this ration has been adopted as our standard control ration, which means that in our experimental work this constitutes our check ration with which all other trial rations are compared. In general, this ration is fairly satisfactory, and apparently complete, tho not necessarily entirely adequate from a nutritional point of view. The addition of such feeds as green alfalfa, or eggs, or tomato juice, or orange juice, or yeast, or cod liver oil are helpful from the vitamin and mineral standpoint.

If whole milk is not available at a reasonable figure, our experience indicates that buttermilk of a good quality, or sweet skimmilk, or fresh condensed buttermilk may be substituted to fairly good advantage. A quart of fresh buttermilk or sweet skimmilk, per pig daily, is a good allowance. If a good reliable grade of condensed buttermilk, running about 30 to 40 percent dry matter, is used, dilute with from two to three times its volume of water and allow about a quart of the solution per pig daily.

A good mineral mixture, to be allowed free-will, is readily made up of the following ingredients: Common salt, 20 parts; wood ashes or finely ground limestone or air-slaked lime, 40 parts; and bone meal or spent bone black or bone ash, 40 parts. To 100 pounds of this mixture add a half ounce of potassium iodide, thoroly mixing. After the pigs are nicely started it is well to insure their getting a little of the mineral mixture, provided they are not taking it from the self-feeder in sufficient amounts, by mixing some in their milk allowance, say the equivalent of an ounce a week, or thereabouts, the amount depending on how the pigs take to it. It is well, however, not to exceed a pound per pig per month.

2. Feed Often Enough and Regularly.

Best results can be secured by feeding five to six times daily for the first few weeks, then gradually cutting down to three times daily. However, good, practical results have been secured by feeding three times per day from the beginning. In our experimental work we have adopted the method of feeding the milk three times daily thruout the experimental periods, this along with a "free-choice" ration of shelled corn, meat meal tankage, and salt self-fed.

Regularity of feeding time, as well as regularity of amount is good practice.

3. Go Easy on Fat and Sugar Modifications.

Cream and sugar modifications apparently have little, if any, virtue. Inasmuch as sow's milk is considerably more concentrated in dry nutrients than cow's milk, this suggests that either cream or sugar or both may well be added in sufficient amounts to make up for the deficiency of the cow's milk in these elements. However, our trials have indicated this to be poor practice, especially so when cream alone is added.

The addition of granulated cane sugar only was also undesirable, but less harmful than the addition of cream (fat).

In no case where cow's whole milk was modified with both cream (fat) and granulated cane sugar was the modified cow's milk as valuable or as safe in orphan pig feeding as the cow's natural milk.

The addition of a little commercial casein, running about 80 percent protein, to whole milk, plus a self-fed, "free-choice" ration of mixed shelled corn, meat meal tankage and salt was helpful, but because of the expense involved is not advised for general farm conditions. Linseed oilmeal and blood meal additions are of some benefit and may, if desired, be included to the extent of one to three percent, by weight of the total milk ration. If pigs receiving oilmeal tend to become somewhat paunchy it is in order to cut down on the allowance.

If the pigs tend to scour on the whole or the skim milk, then it is well to boil the milk. Boil only a minute as this is sufficient to kill the disease bacteria, and also this is time enough to bring about the chemical changes that reduce the size of the curd when the milk is started on its process of digestion in the stomach. Ordinary cow's raw milk and, more especially, the raw skim milk, form large curds when taken into the stomach and these curds sometimes cause scouring in pigs as well as in babies. Boiling a minute does the necessary trick and will interfere very little with the vitamins. But to boil longer than a minute is to be discouraged because prolonged boiling not only interferes with the efficiency of the vitamins in the milk, but tends to precipitate the calcium and phosphates of the milk in the form of tri-calcium phosphate, which material will adhere to the sides of the vessel in which the boiling occurs. Hold the boiling to one minute, therefore, for safety.

4. Feed Sufficient Vitamins.

It is a good plan to supply plenty of "high vitamin" feeds; alfalfa, rape and clover pastures in season carry an abundance of them.

Nutrition experts have secured results in feeding trials with laboratory animals which indicate that milk, while rich in one of the vitamins, the *fat-soluble A vitamin*, may contain only limited amounts of the other two, or the *water-soluble B vitamin*, and the *anti-scorbutic C vitamin*. In some cases the amounts of these latter two may be too small for best results in feeding.

Our experimental results with orphan pigs indicate that the addition of vitamin-carrying materials is beneficial. We used the following vitamin-carrying feeds. Tomato juice, orange juice, eggs and wheat embryo. These were mixed with the milk and fed to the pigs.

In all cases where vitamin-carrying feed materials were mixed with the whole milk and fed to the pigs, the average daily gains were increased. For instance, the juice of one orange per pig daily, when added to the milk allowance, brought about a gain 49 percent greater than the gain with the standard orphan pig ration, figuring on the best average gains. The addition of about five ounces of tomato juice daily to the milk allowance effected a gain over the check lot of 47 percent. Pigs receiving one egg daily, mixed with the milk, gained 47 percent more over the check pigs. The pigs receiving four-fifths ounce wheat embryo per pig daily, mixed with the milk, made an increased gain of 11 percent over the check lot.

This experimental work was conducted in dry lot. Therefore, it indicates that vitamin addition to a ration of whole milk (or skim milk or buttermilk) hand-fed, plus mixed shelled corn, meat meal tankage

and salt, self-served free-choice style, is beneficial. However, where pigs have access to alfalfa, rape, or clover pasture, the vitamin deficiency of the milk and concentrates fed may be supplied to some extent, but this depends on how much pasture leaves the young pigs take; however, it must be remembered that very young pigs do not take to eating forage until they are about three weeks to a month old.

5. Allow Sunlight, Preferably Direct Sunshine, to Fall on the Pigs.

See that pigs get plenty of sunlight in their pens. The value of sunlight in livestock production is so well known that this important factor in orphan pig raising should not be neglected. However, suitable protective shade should likewise be provided in hot season.

6. Encourage Sufficient Exercise.

Exercise plays an important part in the development of strong bones, strong muscles, with resultant healthy pigs. Plenty of exercise, therefore should be encouraged, preferably on pasture, or at any rate on a dirt run, avoiding confinement to concrete or other floors that keep the pig from the soil.

7. Be Sanitary, and Thus Avoid Disease Thru Prevention.

Avoid filth in orphan pig raising operations. Digestive disturbances and other abnormalities may result from filthy and contaminated utensils and quarters. Therefore, keep the utensils and quarters dry, clean, sweet and in good odor. Clean, dry bedding in suitable quantity is emphasized.

It is well to emphasize that the direct sunshine should not cover all of the pen at the same time, inasmuch as this is likely to provide an excess. But it cannot be too strongly emphasized that the direct sunshine, preferably coming straight to the pigs without intervening window glass, is a disease preventative. Of course, in the cold season it is hardly feasible to provide sunshine without letting it come thru the windows; otherwise the pens may become too chilly. However, the windows may often well be opened in the heat of the day. Sunshine coming thru glass is not inefficient; the point is that the unfiltered sunshine is a little better. An outside run in suitable weather is commendable, not only from the sunshine standpoint, but also from the standpoint of exercise, fresh air and other considerations. Also, we must not fail to appreciate that pigs that have access to the soil are oftentimes enabled to get some nutritional constituents that are helpful.

Recent investigations have shown clearly that rickets is caused oftentimes by keeping animals, such as young pigs, in dark quarters. It is now definitely proven that sunshine, shining directly on the little pigs, is a very potent preventative of rickets. If sunshine is not available, then the use of half a teaspoonful of cod liver oil daily to the pig will give good results. In a sense, cod liver oil in a bottle may be spoken of as "bottled sunshine", and yet not stretch the point of fact very far. This is mentioned because very recent studies have shown that cod liver oil and sunshine have a similar effect in improving the tone of animals, more specifically in preventing rickets.

In the raising of orphan fall pigs under laboratory conditions,

this in small pens where the direct sunshine is practically absent, we have had some trouble with rickets, but not where we fed cod liver oil in small amounts, or allowed the pigs to run outdoors in the sun.

Rickets manifest itself in these ways: The pigs may get very "touchy" and nervous; they may fall on their side in a sort of a fit, usually after feeding; they may squeal excessively when touched. They often, in the early stages, tend to crawl under their bedding, seeming to be cold or chilly. In the more advanced stages they knuckle over on their front feet, walking on the knees. A careful examination of the knee and hock joints will reveal most always a swollen and tender condition. In addition, the pigs lose their appetite and appear rheumatic. In truth, rickety pigs are often mistaken for rheumatic ones. Primarily, rickets is a bone disease, altho other structures are ultimately involved in the general advanced pathology. The bones on post mortem show up very thin, and in some instances they are really found to be broken, altho the fracture was not suspected in life.

The orphan pig raiser must beware of rickets. It is easy to avoid by supplying sunshine in the pens and by feeding the proper kind of a ration, one containing in the proper relationship and amounts the bone-making minerals, calcium and phosphorus.

Peculiarly enough, it has been observed at the Iowa station that white pigs are less susceptible to rickets than red ones, and red ones less than black ones. So in human medicine it has been demonstrated that the negroes in the North Temperate Zone are more susceptible to rickets than white folks. The probable reason is that the white skin lets in more of the sun's rays than does the red or the black, hence the amount of sunshine that is barely sufficient for ricket prevention with the white pig is insufficient for the black ones.

8. Consider Limiting the Milk.

One quart of cows' whole milk, or skimmilk or buttermilk, per pig daily in three or more feeds is a fair practical allowance when allowed with a self-fed free-choice ration of shelled corn, preferably yellow, meat meal tankage, and salt. However, more milk may be fed, but too much is likewise not best.

9. Supply an Abundance of Clear, Clean Water.

See that orphan pigs have clean, fresh water before them at all times. Remembering that water is cheaply supplied. Do not forget that the new-born pig is practically 80 per cent water, and needs more and more water daily as he grows and prospers.

10. Keep the Pigs Warm in Well-Ventilated but Not Drafty Quarters.

This does not mean to "roast them" behind the cook stove, nor to furnish artificial heat in the middle of the summer. It does mean, however, that orphan pigs, especially in the earlier days of their orphanage, must be protected from the cold weather of early spring, late fall and winter. Dry, sunshiny, well-ventilated quarters, with the temperature running around 70 to 80 degrees Fahrenheit, are all right for the youngest pigs; pigs that are a month or so old, of course get along splendidly at somewhat lower temperatures.

11. One May Dispense with the Bottle. It Is Not Essential.

It will be necessary to feed from a bottle for a few days, but the sooner the pigs are taught to drink from a trough the better for all concerned. The "orphans" are quick to learn to drink from a trough. With a little patience, the youngest may be readily changed from the bottle to the trough.

The three most important factors are regularity of feeding, absolute cleanliness of utensils, and always fresh milk.

12. It Is Best Not to Have Too Many Pigs to the Pen.

To secure the best possible results per pig, it is good policy not to crowd them in the pens. In truth, until the pigs get started nicely, the fewer the number, say 1, 2 or 3 pigs, in the pen, the better. After the pigs get nicely started, four to six to the pen is a good, practical number. Later, as many as ten pigs of uniform size and strength may be run together. If any pig in any pen is not getting his share of milk, then he should be protected somehow, removing him to more favorable quarters.

With the suckling sows and litters, the ideal, from the standpoint of the well being of both the sow and litter, is one sow with litter to the paddock or run. However, in practice, this is not often feasible excepting in the case of highly prized purebreds. In market hog raising practice, the number of sows per pasture or paddock is larger than in the purebred business, the practice being determined in a large measure by the value of the animals. One can afford to do more fencing and give more care per litter when the weaned pigs are worth \$100.00 each than if they sell for 20 cents the pound, say \$6.00 to \$8.00 each. The same economic consideration governs in the allotment of the orphan pigs; the more valuable they are, the greater the justification for lessened numbers per pen. One must exercise caution and judgment and act accordingly.

SUCCESS WILL COME WITH PATIENCE AND DUE ATTENTION

That orphan pigs can be successfully raised, when properly handled in a careful, regular, systematic manner, has been well demonstrated. A little patience, due diligence, prompt attention to the essential details, and most of all, faith in the orphan pig's outcome, are all indicated if failures would be avoided.

We must bear in mind that the little orphan pigs are more of a care than the shotes of the farm, and that, altho they are robust in many ways, yet too, they are extremely delicate and dainty. By proper handling them in the early weeks of their greatest trials they will grow surprisingly soon into that healthy stage of robust shothood.

And do not be discouraged if the first attempts at orphan pig raising are not crowned with 100 percent success; practice and diligent perseverance, should be combined with the spirit of "profiting by experience by doing better each time". Greater success in orphan pig raising will come to those that seek it rightly; and then the orphan pigs, as well as their owners, will prosper accordingly.