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How Iowa Farmers Respond to Hog Cycles

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This look at the yearly farrowing patterns among areas of Iowa and on 105 eastern Iowa farms may help in dealing with hog cycles. It also suggests some strategy you may want to consider in planning your yearly farrowings.

by Raymond R. Beneke, Donald R. Kaldor and James Herendeen

WHAT'S A GOOD guide for planning the number of sows to farrow each year? Trying to outguess the hog cycle is risky. You may be better off to decide how many sows you can handle most efficiently and then farrow about the same number each year.

Of 105 eastern Iowa farm operators, about three-fourths shifted hog numbers in the wrong direction more than half the time. One reason they moved the wrong way is that hog producers across the country tend to think alike. Other producers made the same production shifts as the Iowa producers. Moderate production changes on each farm snowballed to big changes nationally, which upset the expected trend.

In a previous article we discussed differences in year-to-year variations in sow farrowings among geographical areas in the United States. (See "States Share in Creating Hog Cycle" in the Nov.-Dec. 1960 issue of Iowa Farm Science or reprint FS-888.) We pointed out that Iowa, though not high among states in percentage variation, contributes greatly to the total variation in hog numbers. This is because Iowa produces so many hogs, and even a small percentage change means a large change in actual numbers of hogs produced.

Chart 1. Changes in Number of Sows Farrowed, Iowa, 1948-58

The ups and downs of total farrowings on Iowa farms during 1948-58 show that spring farrowings vary more than fall farrowings (see chart 1). Following USDA reporting patterns, the spring pig crop includes December-May farrowings, and the fall crop includes June-November farrowings.

A shift from spring to fall farrowings is evident over the 10-year period. This shift likely grew out of the increased popularity of multiple-farrowing systems where pigs are farrowed at regular intervals three to six times during the year.

We recently completed a study of yearly farrowing patterns among Iowa areas and also among 105 eastern Iowa farm operators. The results may throw more light on hog cycles and how to cope with them. Let's look first at the area situation of the state and then at how the individual producers respond to the cycle.

Area Differences ...

The map shows that fall farrowings in Iowa tend to be more
stable than spring farrowings except in the western third of the state. Differences among areas of the state, however, are greater for fall than for spring farrowings. East-central and northeast Iowa tend to have the most stable farrowing patterns for both spring and fall pig crops. Western and southern Iowa tend to have the heaviest hog-producing areas and fall pig crops. Western and southern Iowa have the least stable patterns.

What accounts for these differences in farrowing patterns among the different areas? In general, the heaviest hog-producing areas also tend to have the least percentage variation in their production pattern. In addition, our studies of variations by counties show that year-to-year changes in feed-grain production affect farrowing changes. Corn yields vary more in western and southern Iowa, and this leads to greater instability in farrowings.

Ups and downs in farrowings wouldn't necessarily cut hog producers' incomes if the variations were of the right type. If Iowa hog producers, for example, decreased their production while other producers were expanding and vice versa, Iowa producers would have large numbers of hogs during years of favorable cost-price relationships and few hogs when returns were low.

It's evident, however, that the pattern of ups and downs in farrowings on Iowa farms closely follows the national pattern (see chart 2). Apparently Iowa hog producers as a group form ideas about future hog prices much like the producers throughout the country.

Producers across the country respond together—expanding if they expect high prices; cutting back if they expect low prices. When so many producers react this way in the face of a fairly stable and inelastic demand for pork, the result is the large shifts in output and sharp price changes that characterize the hog cycle. Thus, prices often turn out to be greatly out of line with what producers expected when they made farrowing plans.

Farm Differences . . .

Carrying our analysis a step further, we looked at production patterns of 105 eastern Iowa farm operators who had a 10-year history of hog production records.

Farrowings varied greatly from year to year on most of the farms, but there were some differences among farms in the amount and the pattern of year-to-year changes. We found less percentage variation on farms with a high output of hogs than on farms where hogs are a small enterprise.

We also noted that producers who usually fed a large percent of the grain they raised or fed more than they raised tended toward higher farrowing variations than operators who fed a smaller part of the grain they produced. On farms where cattle feeding was an important enterprise, spring farrowings tended to vary more than where cattle feeding wasn't important.

We then studied differences between year-to-year variation in farrowings and the type of farrowing system used on the 105 farms. About 19 percent used a 1-litter system, 47 percent used a 2-litter system and 34 percent used a multiple-farrowing system. We saw little difference among these groups in year-to-year stability of farrowings.

Factors such as operator's age, years of farming experience and tenure arrangement had little effect in explaining the differences among the operators in the stability of the production pattern.

All operators were long-time members of a farm business association. As a group, they were above-average managers. Their contacts through the farm business associations gave them an opportunity to be better informed on price outlook than typical hog producers.

For these reasons, you might expect that the group wouldn't follow the crowd as closely in adjusting yearly farrowing plans. This isn't the case (see chart 2). The farrowing pattern of the 105 producers is much like the Iowa and national patterns, in terms of the ratio of annual farrowings to the average level of farrowings. The pattern for the whole group, however, consists of 105 individual patterns, with no two exactly alike.

We observed the number of

![Chart 2. Relative Variation in Annual Sow Farrowings, 1948-58](chart2.png)
changes in sows farrowed during the expansion and contraction phases of the 1948-53 and 1954-57 cycles. During the years of expansion—1948, 1949, 1950, 1953 and 1954—an average of 60 percent of the group increased farrowings. About one-third decreased farrowings, and 7 percent made no change.

During the years of contraction—1951, 1952, 1955 and 1956—an average of 53 percent decreased farrowings, while 37 percent increased farrowings. The remaining 10 percent made no year-to-year change in farrowings.

Close inspection of operators' individual patterns reveals that the over-all cycles resulted from a wide variety of patterns of change. Sequences involving increases dominated the expansion phase, and sequences involving decreases dominated the contraction phase.

Pattern Types . . .

There were at least four general types of patterns followed on the 105 farms: (1) counter-cyclical, (2) cyclical, (3) stable and (4) random. Farrowing patterns representing the first three types are shown in chart 3.

Each year, a counter-cyclical producer changed his production opposite to other hog producers. When hog numbers were increasing, he decreased his farrowings. When other hog producers were cutting back, he expanded his numbers. None of the producers always moved counter-cyclically, though one operator changed 8 out of 10 times against the cycle and two shifted counter-cyclically 7 out of 10 times. Only eight farmers moved against the cycle more often than they moved with it.

The cyclical operators shifted farrowings right along with the cycle—increasing when most other operators were expanding and cutting back when others did so. Two operators followed the crowd each year. While only two operators exactly followed the over-all cycle, seven followed it 9 out of 10 years and 18 followed it 8 out of 10 years. Producers who moved with the cycle 6 or more times out of 10 were classed as cyclical operators. On this basis, 80 of the 105 fell into this category—the largest of the four groups.

No operator farrowed the same number of sows each year. Only four or five had enough stability in their farrowings to suggest that they were attempting to follow a stable pattern. Another three or four operators were gradually increasing or decreasing hog production during the period and had practically no "ups and downs."

The random classification is a "catch-all" group. It includes operators whose farrowing patterns didn't fit into any of the other groups. Their farrowings varied, often widely, but with no apparent relationship to the hog cycle or to changes in the corn-hog price ratio.

About four-fifths of the 105 operators shifted hog numbers from year to year in an attempt to adjust to changing price expectations. But 76 percent of the 105 changed in the wrong direction more than half the time. Stable operators didn't make such shifts. It's not clear to what factors the random group may have responded.

Best Strategy?

Let's now look at some possible strategy to follow in planning the number of sows to farrow each year. If, in a given year, you fore-see that you won't cover variable costs that arise directly from producing hogs (such as feed and veterinary expenses), you might farrow no pigs, or just enough to provide gilt s to "get back in." In addition to meeting these variable costs, you must allow for hired labor cost or a return for your own work. During any one year it's not essential to cover fixed costs to justify continuing to raise hogs, since these costs continue whether you raise hogs or not.

A second alternative would be to cut back on "extra litters" that are inconvenient and less efficient to handle with your existing facilities and labor supply. If some other enterprise looks attractive, you might expand it by using labor saved on hogs. Most of the 105 operators apparently attempted to follow the policy of cutting back rather than getting in and out. Only five or six producers seemed to follow an in-and-out system during the period studied.

A third strategy is to organize an efficient hog production program geared to your skills, facilities, labor availability and feed supply—and to try to farrow about the same number of sows each year. Such steady numbers should provide a cost advantage. Equipment would be fully used each year. But facilities wouldn't be periodically overcrowded, and you could give more consistent attention to breeding and management than on an "in-and-out" basis. Though you might not do as well as the successful counter-cyclical operator in terms of overall profits, you'd probably do better following this stable pattern than most producers who follow the crowd.

If you count yourself among the few who are right most of the time in predicting which way hog numbers and prices will go, you may find a counter-cyclical operation the most profitable.

If you're among the majority—those who keep trying to shift, but often change in the wrong direction—you're likely to make more money over a period of years by adopting the third strategy—a stable farrowing pattern.