

The **economic** imperative of **prevention**

Common financial metric measures can be used to track whether assets are being efficiently used and help the producer benchmark their operation. Swine Production has special characteristics to take into account when calculating farm productivity.

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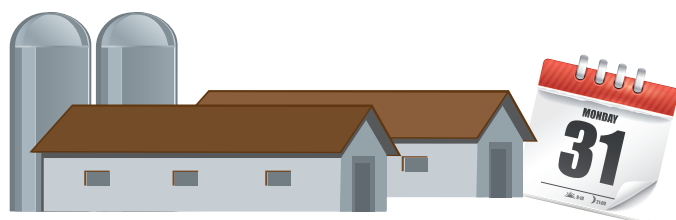
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One of the most critically important benefits of disease prevention strategies is they help prevent the waste of resources which are in place, ready for use that cannot be reduced or adjusted if production is less than expected. In modern pork production, this means the fixed assets, typically buildings and equipment (but in reality, much more). If you pay for a building which can produce 1,000 finishers to full expected profitability but only 85% show up, an economic problem is created that can never be completely corrected. The same is true, for instance, if all of pigs show up but only 80% of them perform to expectation due to preventable disease.

Fixed assets have a finite useful life and they tend to deliver their highest benefits in the early years of their economic life when everything is new, consistently working properly and surfaces are smooth and resist the build-up/trapping of waste which can harbor disease etc. Even though repairs can be made for many years to restore working condition to fixed assets, productive capacity which is lost early in the life of a building (or at any time) can never be recovered by subsequent performance. The indication that this has happened is measured through an increase in the per unit cost of production. When there are fewer kilograms produced due to disease, the cost for each one rises. This happens because the per unit fixed cost of production are calculated by dividing the amount of fixed cost used by the kilograms produced.

Fixed assets have a finite useful life



LOSS OF PRODUCTIVE CAPACITY



INCREASE OF PER UNIT FIXED COST OF PRODUCTION



$$\text{Per unit fixed cost of production} = \frac{\text{Fixed cost used}}{\text{Kg produced}}$$

Most used financial metrics – Asset Turnover

The most common financial metric which can be used to track whether assets are being efficiently used is called Asset Turnover. It is measured by dividing the total sales for a period (a month, a turn of a building, a year, for instance) by the average value of the fixed costs used to produce those sales. We use average cost because assets usually decline in value over time, so if the calculation of Asset Turnover was for a year, we would add the beginning value of the assets to the ending value of the assets a year later and divide by two to get the average.

$$\text{Asset Turnover} = \frac{\text{Gross sales}}{\text{Average asset value}}$$

Every industry and even every phase of pig production has a characteristic range for Asset Turnover which can be used to evaluate building use performance and to benchmark with other farms. Since the value of total sales can be affected by the sales price of the animal regardless of how well the production system is operating, many firms use a long-run average price for pigs (rather than the current price) in this calculation. This ensures the full impact of any change in Asset Turnover is confined to production performance.

Fixed assets have a finite useful life and they tend to deliver their highest benefits in the early years of their economic life when everything is new.

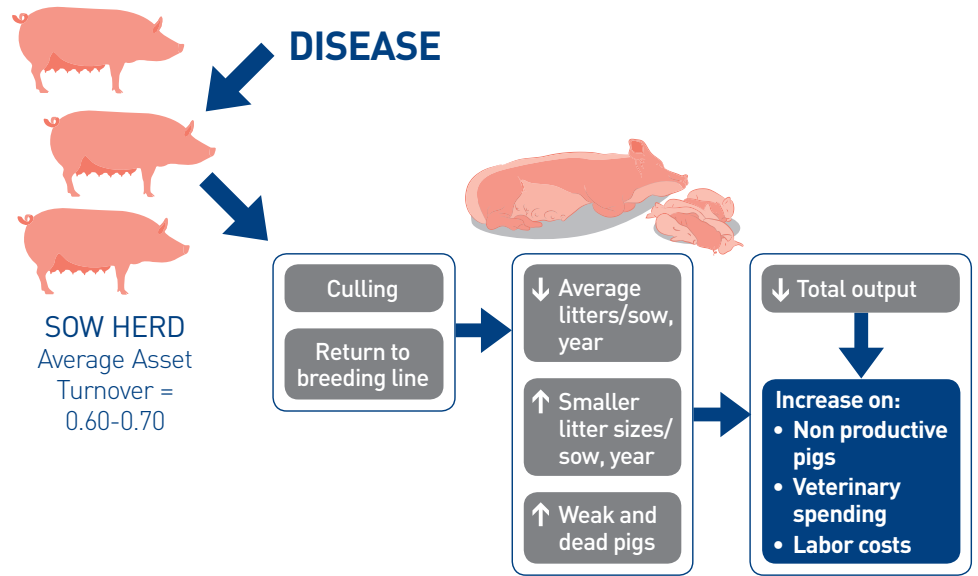
An above average value for Asset Turnover for the sow farm is between 0.60 and 0.70. This means that even when a sow farm is producing well, it only produces 60-70% of the value of the fixed assets in sales. This is a low value compared to non-agricultural industry and generally reflects the fact that biological production cannot be speeded up (like shortening the gestation period) in the way a second shift can be added to a factory which doubles the value it creates in the same building virtually overnight. This is a warning too. When there is little flexibility to improve asset use due to the constraints of biology, it is critical to place a floor under high but constrained performance through prevention strategies.

In the sow herd, diseases like PRRS slow the annualized turns of the sows. This happens as a significant number of animals fail to conceive or abort their litters during gestation. When that happens, the animal is either culled (an expense) or must start the process over by returning to the breeding line. This lowers the average litters per sow per year and the number of pigs weaned per sow per year. In addition, litter sizes are often smaller on average and there is an increase in the percentage of weak pigs which survive farrowing and these often die before weaning. This reduces total output and increases the percentage of pigs transferred to nursery/finishing which will not perform cost effectively or reach their target profitability within the proscribed grow-out period. In addition, there is normally a marked increase in veterinary spending as well as increased labor costs associated with caring for sick pigs and preventing further infection. These things all affect Asset Turnover.





In the sow herd, diseases like PRRS slow the annualized turns of the sows



In livestock production, where there is little flexibility to improve asset use due to the constraints of biology, it is critical to place a floor under high but constrained performance through prevention strategies.

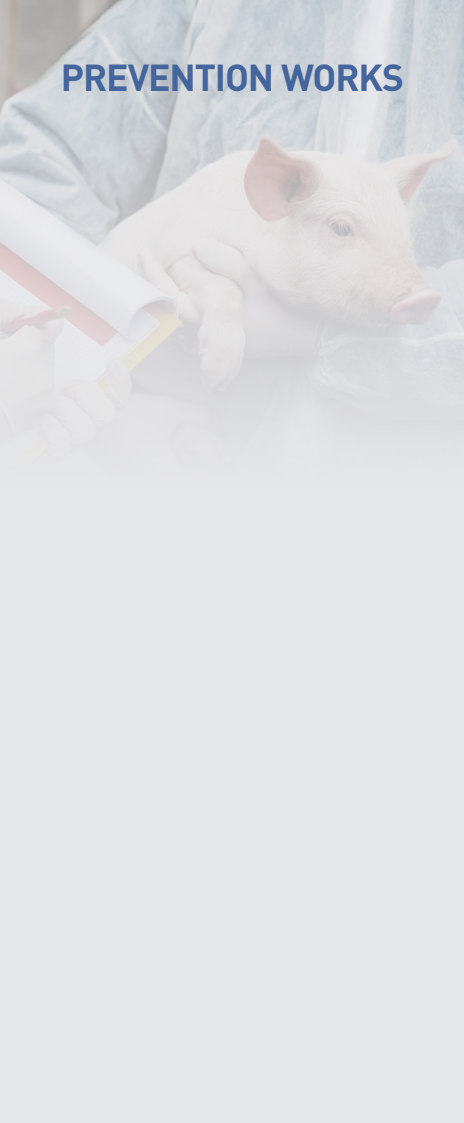


Most used financial metrics – Net Profit Margin

The other key financial metric which evaluates the farm’s wise use of resources is called the Net Profit Margin. Net Profit Margin is a simple ratio like feed efficiency, calculated as Net Income or Profit/Gross Sales. It measures the amount or percentage of each euro of sales that is profit. Sales revenue is used to pay expenses. Once expenses are all paid, the excess is profit. Net Profit Margin is the percentage of that profit compared to the value of all sales. When disease strikes, sales revenue and expenses are both affected. In general disease reduces sales and increases expenses causing Net Profit Margin to fall. A well operated sow farm can expect Net Profit Margin to be between 6-15% over time. Again, many farms use the long-term average price of piglets to calculate the value of total sales so that transitory increases in prices don’t fool the manager into believing they have improved production.

$$\text{Net Profit Margin} = \frac{\text{Net income}}{\text{Gross sales}}$$

In the nursery/grow-finish area, diseases like PRRS reduce growth rates, sometimes dramatically thereby slowing the turns of the building and resulting in many more lightweight pigs when the grow-out period is fixed due to pig flow demands. Even if there is flexibility to keep the pigs longer to increase weight, fewer pigs can be produced in a year due to available spaces being occupied longer for each turn. The amount of feed required for each kg of pork increases since when the pigs slow their consumption, they tend to eat a greater percentage of daily intake simply to support their current body weight (maintenance consumption) and therefore there is less gain per kg consumed.

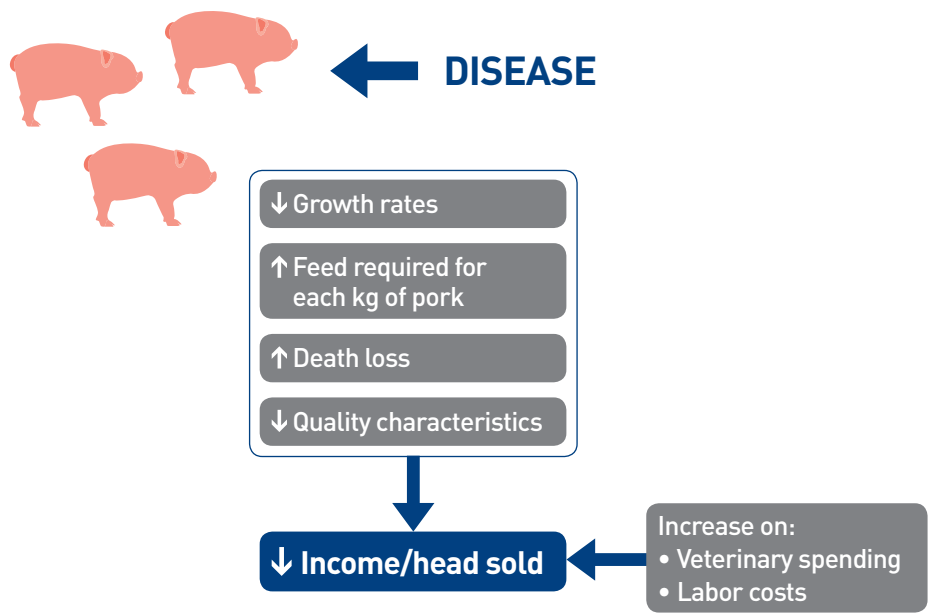


The presence of disease can raise cost dramatically, reducing income per head sold because of the new costs and labor needed to treat and care for sick animals.

Death loss usually increases in the presence of disease and the quality characteristics of the animal are often reduced (those reaching ideal combinations of weight and lean, for instance) thereby resulting in less income per head sold. Like in the case of the sow farm, more money is required for veterinary costs and labor to treat and care for sick animals. In addition, some preventable viral diseases may lower resistance and increase the likelihood that secondary infections requiring antibiotic retreatments emerge. This can raise cost while dramatically reducing income if the pigs were participating in an antibiotic-free program for a niche retail market.

In the nursery/grow-finish area, diseases like PRRS can dramatically reduce income

NURSERY/GROW-FINISH AREA



For a well-managed nursery/finisher or wean-to-finish operation, an Asset Turnover of 1.15 to 1.40 indicates healthy pigs and above average performance. A Net Profit Margin between 0.14 and 0.20 is considered above average profit performance and can rarely be achieved when active disease is present. These financial efficiency measures help the producer benchmark their operation and are widely used by sources of capital to decide not only how much debt they are willing to supply but they are used to determine the interest rate offered.