

## **Input = Output, Interpreting the Results**

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The Swine Industry has undergone a lot of changes in the past. It has come from the family farm where it was a way of life, not a business. It was revenue, not profit driven. We worried about output not efficiencies, didn't consider who the product was going to and sold to a small domestic market. Presently, we see a business approach emerging, there is a growing awareness of product quality, we are implementing SOP's and are facing increasing competition. In the future we will be facing the reality that pork production is like a manufacturing business with focus on the consumer, international markets, shrinking profits and all facets of the business will be integrated- production, marketing and financial information. This is when Information Management systems become an integral tool of the production process. I believe the future has already arrived.

The objectives of Information Systems such as PigCHAMP are to convert data into information, information into knowledge, to be able to use this knowledge to improve profitability and to know when to intervene and when not to intervene in a process. One of the most common mistakes we make is to intervene when it is not needed and not intervening when we should be.

Garbage In= Garbage Out- This statement speaks for itself and points out that the Information Management systems are only as good in quantity and quality as the data being collected and entered.

PigCHAMP (PC) can answer most of your questions if sufficient and applicable data is entered into the program. PC will allow data entry for every event in a sow's life. Locations, back fat, farrowing room feed consumption, treatments, etc. as well as the basics such as entry, breeding, farrowing, weaning, and removals. What it boils down to is if you don't enter it, you can't use it. If you don't enter locations, then you won't be able to use locations to find a particular sow. If you don't enter feed consumption at the farrowing room then you won't be able to analyze any data related to feed consumption during lactation. The same goes for the nursery, grower, finishing areas of production. If we use the section of the program dedicated to this area, we can evaluate whether we are feeding the right feed, or whether there would be a specific time period where we may want to use medications in the feed or water to prevent mortalities. It is a good idea before you start using the program or even now to re-evaluate, to sit down and itemize exactly what you want to know and to set the parameters for your data collection (it is never too late to change). It has been estimated that as much as \$5 per pig marketed is lost in over or under feeding to the growth potential of the pig.

There are four different types of reports that PC offers. Managing the process, Monitoring, Diagnostic, and Forecasting. Some of the reports overlap into more than one category. "Managing the process" reports can be used at the barn level to manage the flow of production. They can be used to identify worker tasks that are done on a regular basis, provide information necessary to accomplish these tasks and identify individual animals at key points in the production phase. These reports include Action Lists, Summary Cards, Current Status, Farrowing Rate Report, History, Group Weekly summary etc. "Monitoring reports" can be used to monitor trends, detect problems as they emerge, monitor facility utilization, assess response to an intervention and evaluate performance. These reports include Performance Monitor, Growth performance and Group Comparison to name a few. "Diagnostic reports" evaluate output, capacity and efficiency of a herd, identify potential causes of problems, and allow us to prioritize use of inputs. Diagnostic reports include Database Applications, Cohort analysis, group summary, and the Growth performance. "Forecasting reports" allow us to forecast when events will occur or when we should be taking action. Using these reports we can forecast gilts needed, schedule feed deliveries and semen deliveries. Examples of these take in the Farrowing Rate and Group Weekly summary reports. Many of these reports overlap and can be used for multiple purposes.

Before any of these reports can be of any value we need to ensure that our PC program is free of errors. The main two reports that will allow you to evaluate the quality of the data entry and help you to clean things up are the data integrity report, and the action lists. The data integrity report will itemize any missed events such as a mating. Action lists will let us know when an animal falls out of the norm. For example, the Sows Due to Farrow report will tell us that an animal is overdue and how long. If a sow shows up as being overdue by 30 days we know that there has to be missing data, either a repeat breeding was not recorded, the farrowing data has been missed or a removal event has gone unrecorded. These and animals listed on other reports can artificially inflate your Nonproductive days. Ghost sows and improper or inaccurate inventories decrease your data's usefulness. Trace files are also a good way to check data entry for errors on an ongoing basis.

In this day and age and prices there is an increased need to decrease operating costs and increase revenues and any tools that are available to us such as PigCHAMP need to be utilized to the fullest extent. I have heard managers say they could run a barn with no records at all, just by using a proper flow. That may work to some extent but the fine tuning that is necessary now is not possible without accurate data. Most of us can get good production, what we need is a way to minimize costs. To be profit driven we have to include the largest costs associated with raising a pig, one of which is feed. Most operations do very little to monitor this and it is one of our largest costs. We need to move from monitoring feed cost to forecasting feed costs and this won't happen without firstly collecting real time data. Another major cost is excess NPD's. This is most important as a predictor of breeding herd efficiency and should be measured on a weekly basis, no different than we monitor pigs weaned per sow, preweaning mortality, litter size, or farrowing rate. Monitor productive days and non-productive days each week.

Non-productive days accumulate when a sow is not pregnant or not lactating. It is important to know exactly how many NPD's our herd actually has in order to decide whether we need to decrease in that area. NPD's can vary according to each system or individual barn so comparing your NPD's to another operation could be misleading. Each operation makes a decision as to whether they enter their gilts when they arrive, when they are moved out of the isolation unit or entered upon breeding. Other contributing factors can be whether or not the operation decides to HNS gilts before breeding and how many times. Knowing these factors can help us make knowledgeable decisions to reduce NPD's and by how much. The Performance Monitor will tell us what our Average Non-productive days per sow are. There is definitely a cost to a Non-productive Day. Each day that sow is non-productive she is eating feed and taking up space. If we use \$1.50 direct cost and another \$1.50 indirect cost for the space that a productive sow could be using and the production she could be giving us, one Average NPD in a herd of 1000 would be worth \$3000.00 per year.

Most of us know how to use the basic reports. The Action lists, performance monitor, farrow rate report, etc.. What else can PC tell us? Here are a few examples of reports or uses for PC that may be of help.

Pig Deaths Analysis report can let us know when we need to observe litters to implement management strategies to improve survivability.

We can enter treatments into PC and use them to help us manage our CQA programs and identify times when we could be doing a better job of population treatments through water or feed medications.

Using a database applications report and Service Day or Farrow Day can help us decide which day of the week we may need more staff and can be used to evaluate that staff.

Group weekly summary report can give us the week that deaths in the finishing barn may increase. We can be proactive and treat just before to prevent mortalities.

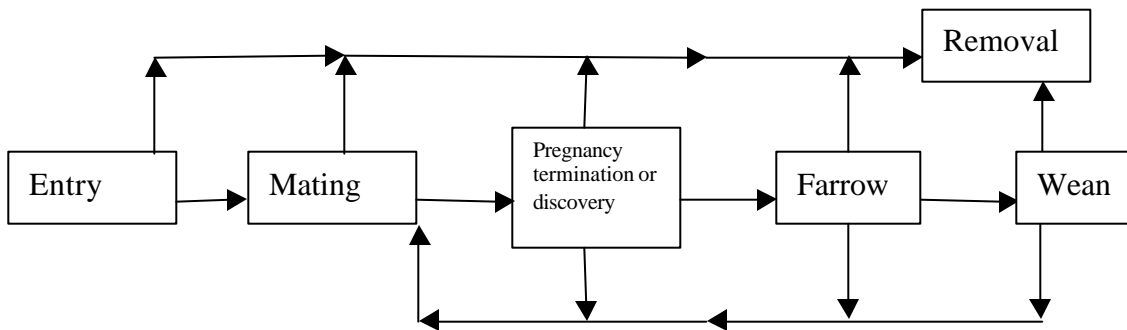
The most expensive part of a barn and generally the limiting factor on production in the barn are the farrowing crates. In order to decrease fixed costs per pig sold we need to keep this area of the barn full. Use the farrowing rate report to keep the crates full by hitting targets. This report can ensure that we have enough gilts on hand to fill any holes.

Cohort Analysis Report: This report is similar to the Performance Monitor with one big difference. The Cohort analysis report monitors a group of sows categorized by event date from that event date through the whole cycle. Service dates, Farrow dates, or Wean dates can be used to segregate a group of sows with these events in common. Report can be set up to show animals in groups by weeks, months, days, etc. This report has the same parameters as the Performance Monitor but the information follows that specific group of sows not a time period. This report would be excellent to monitor a change in feeding routines, etc. If you decided to feed fish meal for five days before weaning to a

certain week of sows you would be able to compare their performance to that of the sows weaned the week before who were not fed the fish meal.

Database Applications is a very versatile report. With this report you can selectively chose which variables you want to evaluate and exclude those that may confuse the issue. This report can be tailor-made to your needs. If you can ask the question you can get the answers with this report. It is important to understand the PigCHAMP timeline in order to specify the exact information you want.

Using PC to cull animals.



At each step of the process a decision must be made to cull or to keep. Using the following reports an educated decision can be made. This is where the non-productive days start building. Set rules need to be made at each stage. Implement, monitor and review. Without rules, we are like a river without banks and would be working in a big puddle.

At Entry:

- ID number                      Essential
- Entry date                      Essential to know how long in herd before breeding
- Alternate ID
- Birth Date                      Essential to know how old before breeding
- Origin                              Compare origins for future purchasing
- Genetics                            Compare genetics (F1's to F2's)

Rule:

1. Gilts are kept for \_\_\_\_\_ days without an estrus then removed.
2. Gilts are rejected if they will not or can not physically be bred in \_\_\_\_\_ days.
3. Gilts are kept and rebred \_\_\_?\_\_\_ times and then removed.
4. Gilts are culled if they return to estrus after \_\_\_\_\_ days of age.
5. Gilts are culled if they abort after \_\_\_\_\_ days.

Reports to use:

- Action lists- Gilts entered but not served.
- Database applications- using variables Servno, ID, Parity and filter servno>? AND Parity=0

At Mating:

- ID number                      Essential
- Date                              Essential
- Mating/AI/ Boar in      Essential to evaluate boar performance
- Boar Id                              for evaluation
- Technician ID              Can monitor worker performance
- Hour                              can monitor am vs. pm, or can be used for mating quality

Rules:

1. Cull after \_\_\_\_ services
2. Cull based on performance after exceeding target breedings.
3. Skip heat based on body condition or uterus unprepared for service
4. Cull if repeats or abortions or found open after \_\_\_\_ days.

Reports to use:

- Database applications using the same variables as above only parity filter would be greater than zero.
- History reports
- Database applications using other variables
- Action lists

At Pregnancy Termination or Discovery:

- Pregnancy Check results
- Termination reason      Essential to monitor herd health and fertility

Rule:

1. Animals are allowed \_\_\_\_ repeat cycles before removal
2. Aborted animals are given \_\_\_\_ chances or days from service
3. Found empty are culled after \_\_\_\_ days from service

Reports to use:

- Action lists- sows found not pregnant

At Farrowing

- ID                                      Essential
- Born live                              Essential
- Stillborn                              Essential
- Mummies                              Essential
- Total weight                      For sow or genetic evaluation, evaluate deaths
- Induced                              To evaluate stills, deaths or return to estrus
- Assisted                              To evaluate stills, deaths or return to estrus

- Locations To evaluate rooms, crates, equipment

Rules:

1. Cull based on health only
2. Nurse off if sow can't maintain litter or if the litter size is less than \_\_\_\_\_.

Reports to use:

- Database Applications- filter based on General comments

At Weaning

- Piglets Essential
- Weight Essential to evaluate SPI

Rules:

1. Cull based on health only
2. Nurse on if piglets require a sow and animal not needed for breeding target.
3. Cull if fails to come into estrus after \_\_\_\_\_ days.

Reports to use:

- Farrowing rate report to forecast number to be weaned
- Actions lists- Sows weaned but not served.
- Database Applications- filter by General Comment

These rules should be re-evaluated as your numbers improve. All of these tools can help control your NPD's.

PC data can also be converted easily into Excel for graphing purposes. Many farms are using lifelines to monitor trends over the course of time.

PigCHAMP is capable of storing and retrieving massive amounts of information which we can then turn into knowledge. It still amazes me how complex pork production is and how one action can affect the whole process. Using the knowledge that we can generate enables us to welcome the future confidently and successfully.