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Farm-level analysis, benefits, and constraints

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Introduction

For over 20 years, keeping records on sow farms has been a vital part of management and has been gaining in importance. As we continue to produce more pigs per sow per year the individual attention and importance of every sow is heightened. It is important to identify which sows are under performing or over performing and that the total capacity of the farm is being maximized to make weaned pigs. Records need to be done accurately, in a timely fashion and used to manage the farm. Those tasks are key for any record system and the farm should strive to make sure that they are entered into a program quickly, used on the farm and they accurately reflect the farm's production.

Managers are trying to produce as many pigs at the heaviest weight possible from each sow. The approach the farm manager and staff apply on the farm always requires some type of records. Being able to utilize the records effectively will differentiate the best performers from the poor performers.

This paper will review various benefits and constraints including a definition of necessary reports and data records that will help develop and manage a successful sow unit.

Minimum reports

The reports mentioned are from PigCHAMP because that program has been a standard in the industry. The reports will correspond to a similar report in most other data package that is chosen for the sow farm.

Weekly reports

The reports listed in **Table 1** and **Figures 1** and **2** are three primary reports that are necessary to manage the herd on a weekly basis.

These reports should be updated each week and any number that is not correct should be fixed immediately. The information in the three reports will be used to flow the farm and maximize the production. For example, an Action list will point out the non-productive animals so the farm staff can identify them to get them back on track.

Monthly reports

- Parity distribution for 3 months
- Repeat estrus report for 3 months
- Wean to estrus report for 3 months

The parity distribution will help determine if the farm is moving in the right direction, the opportunities across parities as well as benchmarking. Repeat estrus gives the farm an idea of how animals are cycling and how well the farm is finding the open animals. The wean to estrus tracks one of the most important non-productive periods in the sows life.

The most successful farms not only review these reports on a weekly and monthly basis but they also implement a board which is hung in an area that is visible to all staff. This board, sometimes referred to as a "focus board" is used to track the rest of the vital management information.

It is important to use two boards, a breeding board and farrowing board. The breeding board will list the total number of sows bred, (which is broken down by female category type i.e. opportunities bred, weaners bred, returns bred, gilts bred), conception rate for the group, fallout of pregnancy reason, culls, deaths, number found in heat, preg check open, and not in pig. (**Figure 2**) The breeding board tracks the breeding success of each group as well as vaccinations. The farrowing board will list the number of animals farrowed, born alive, stillbirth, mummies, number of piglet deaths, number of sows weaned, number of early weans and number of pigs weaned. The farrowing numbers should be tracked to help benchmark the success of the farm so we know exactly where we are at as the farm moves forward to the wean process.

Training

Every member of the farm staff should understand why records are important primarily because they reveal opportunities on the farm and they can be used as a management tool. It is vital to emphasize the importance of the records so farm staff can report the numbers accurately. As farm personnel become familiar with the sow farm they should understand how each number is calculated although not every parameter on the performance monitor is used. The two common calculations that I address at farms include pigs weaned/mated female/year and pre-weaning mortality. It is important that the farm understand where those numbers are derived from, how they can be manipulated and their possible shortcomings as far as calculations.

Table 1: Performance monitor, listing 10 individual weeks

	PERFORMANCE MONITOR									
	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun
	28-Apr	5-May	12-May	19-May	26-May	2-Jun	9-Jun	16-Jun	23-Jun	30-Jun
BREEDING PERFORMANCE										
Total number of services	162	146	154	156	169	160	153	173	173	135
Percent repeat services	8	4.8	4.5	6.4	4.7	8.1	6.5	6.4	5.2	7.4
Percent multiple matings	88.3	89.7	94.2	88.5	87.6	85.6	86.9	91.3	89	82.2
Weaning - 1st service interval	7.4	7.8	8.1	8.3	8.6	9.6	9	9.4	8.6	9.7
Percent sows bred by 7 days	78.6	77.8	78.4	71.3	71.7	66.7	71.2	67.9	72.9	64
Entry - 1st service interval	2.8	2.6	3.3	2.8	3.2	3.3	2.8	3.5	2.7	3.4
FARROWING PERFORMANCE										
Number of sows farrowed	140	147	152	117	162	153	141	135	159	138
Ave parity of farrowed sows	3.5	3.4	3.9	4	3.3	3.5	3.3	3.6	3.6	3.6
Average total pigs per litter	13.3	12.6	12.7	12.7	13	13.1	12.8	12.6	13.4	13.2
Average pigs born alive/litter	12	11.6	11.2	11.3	11.8	11.6	11.6	11.1	11.5	11.9
Ave birth wt / liveborn pig	0	0	0	0	0	0	0	0	0	0
Percent stillborn pigs	7.7	5.7	8.7	9.2	5.7	8.9	6.8	9.6	11.7	7.4
Percent mummies	2.1	2.4	2.8	2.3	3.6	2.7	2.5	2	2.5	2.7
Farrowing rate	89.2	84.5	85.9	88.6	90	86	87	87.1	89.8	77.1
Adj. farrowing rate	90.9	85.5	87.4	91.4	91	87.9	89.8	89.4	90.3	77.1
Farrowing interval	142	145	142	143	144	143	141	142	140	142
Litters / mated female / year	2.52	2.53	2.51	2.52	2.51	2.5	2.51	2.53	2.56	2.58
Litters / crate / year	.	.	.	.	.	.	.	.	.	.

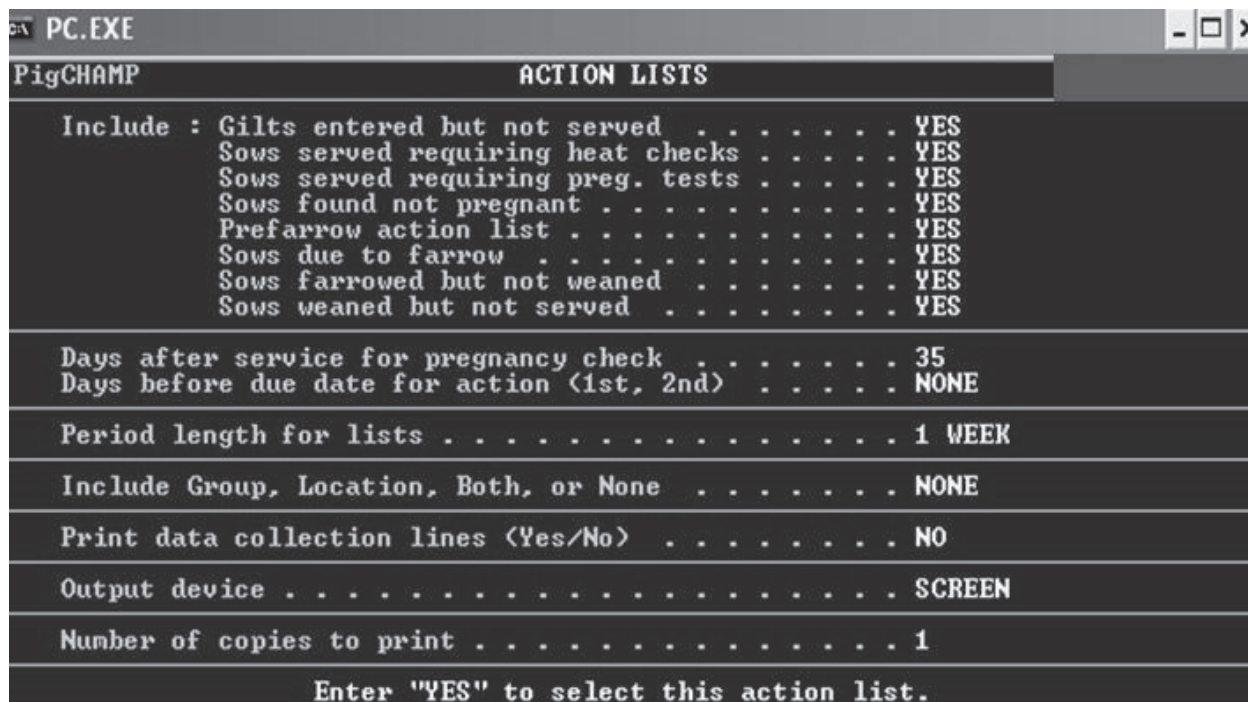
Table 1: Continued

	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun
	28-Apr	5-May	12-May	19-May	26-May		9-Jun	16-Jun	23-Jun	30-Jun
WEANING PERFORMANCE										
Number of litters weaned	162	149	151	150	153	154	153	154	148	152
Total pigs weaned	1650	1478	1533	1515	1462	1472	1566	1546	1486	1520
Pigs weaned per sow	10.9	10.6	10.8	10.3	9.7	10	10.7	10.1	10.9	10.3
Pre-weaning mortality	10.2	11.1	9.9	9.1	12.6	10	8.2	9.6	9.3	8.4
Average piglet weaning weight	10.8	10.7	11.1	12.3	11.6	11.8	10.9	11.1	11	11.1
Average age at weaning	14.8	15.4	15.6	15.7	15.8	15.6	15.2	15.1	14.8	14.7
Adjusted 21 day litter weight	144	136	143	155	138	145	143	143	143	144
Pigs wnd / mated female / yr	27.4	26.8	27.2	25.9	24.4	24.9	26.8	25.7	27.7	26.6
Pigs weaned / crate / year	.	.	.	.	.	.	.	.	.	.
Pigs weaned / lifetime female	33	41	32	29	46	33	32	40	39	43
POPULATION										
Ending female inventory	3089	3086	3075	3085	3098	3095	3092	3077	3070	3046
Average parity	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Average female inventory	3083.6	3077.7	3075.3	3066.3	3077.3	3087.1	3084.3	3069	3066.4	3062.7
AFI / Crate	.	.	.	.	.	.	.	.	.	.
Average gilt pool inventory	13	11.7	14.6	9.4	19	20	12.7	14.1	13.6	12
Gilts entered	31	33	23	41	38	32	32	35	27	0
Sows and gilts culled	30	32	30	30	22	30	30	45	30	22
Sow and gilt deaths	5	4	4	1	3	5	5	5	4	2
Ending boar inventory	6	6	6	6	6	6	6	6	6	6
Sow - Boar Ratio	514.8	514.3	512.5	514.2	516.3	515.8	515.3	512.8	511.7	507.7
Replacement rate	52.4	55.9	39	69.7	64.4	54	54.1	59.5	45.9	0
Culling rate	50.7	54.2	50.9	51	37.3	50.7	50.7	76.5	51	37.5
Death rate	8.5	6.8	6.8	1.7	5.1	8.4	8.5	8.5	6.8	3.4
Ave non-productive sow days	38.8	37.2	38.4	37.2	39.1	39.9	39.3	37.9	35.2	31.2
Ave NPD / parity record	13.4	12.2	13	13.9	11.5	12.8	13.4	13.1	11.1	13.3

Figure 1: Farrowing rate report, 20 weeks

Group	40	41	42	43	44	45	46	47	48
Dates	596- 602	603- 609	610- 616	617- 623	624- 630	631- 637	638- 644	645- 651	652- 658
Total served	55	94	52	73	86	63	82	77	69
Weaned sows	--	--	--	--	--	--	--	--	--
Gilts served			37	66	68	57	78	65	58
Opportunity			11	2	12	4	3	9	5
Returns			4	5	6	2	1	3	6
21 day heat check	6	6	2		4	9	4	5	0
30 day preg test		6	1	3	8				
Aborts							1	1	
Culls					2	2	1		
Deads	1						1		
Late returns NIP									

Figure 2: Action lists (daily management) report for the week



Records training needs to be a part of the basic training program of employees. The key numbers should be reviewed with a new employee and the manager/leader should use all of the numbers available.

Benefits

The primary benefit of using sow farm records is that it allows management and consultants to identify problems early and take necessary steps to correct or improve those areas. The most important quality of the boards or Pig-CHAMP information is keeping the focus on farm goals and motivating everyone to concentrate on improving or

maintaining the production numbers. It can also show how the farm has performed historically, how improvements were made and the opportunities of the sow farm.

Accurate records are a powerful management tool which is important on both individual sow records and a whole herd record. Records quickly and easily summarize the happenings on a large farm which can be interpreted by all employees to keep everyone on the same page. This also allows for a comparison between farms which will be covered in the system's discussion but the competition between similar sow farms and similar genetics is a very powerful driver of production.

Constraints

Accuracy is one of the biggest constraints on the sow farm. It is important that everyone is aware which number to record and when/where to record it. This can be difficult when multiple people do data entry.

Timeliness can be a constraint as well. Sometimes farm personnel know more about what is going on at the farm than the computer does because by the time information can be entered and data is outputted to the farm staff production has changed. This can lead to frustration and some may view the record keeping as waste of time.

Record keeping may not feel fluid or flexible with the farm. For example the farm may be making changes or doing things differently to improve certain areas however that may not always be reflected in the data. The data also may not help make those decisions.

Many decisions on the farm tend to be based on the gut feeling of the certain issue and its impact. For example, the decision to change antibiotic protocols or inducing protocols, etc are not always made based on what the actual data shows. This would require too much time to enter each piece of information correctly and it can be hard to run an “experiment” on a farm when we need to get our daily tasks done as well. This can be time consuming

and can require double or triple entry on some farms to get it done right.

Employee training is important. Employees need to understand the importance of keeping records and training needs to be done routinely.

Summary

Record keeping and use on a sow farm is hard to put a value on. The better the employees are at documenting and reviewing/acknowledging the records the more productive the farm will be. The benefits far outweigh the constraints but you need to continue to identify the constraint on a farm by farm basis to help overcome it and obtain maximum production.

