Frank’s Note

The sow is the engine of the commercial hog farm, and to optimize productivity, it’s critical to keep the breeding herd running smoothly. From the time a replacement gilt enters the breeding herd and on through consecutive farrowings, the No. 1 priority is to meet her needs through proper management, health, nutrition, housing and equipment.

The farrowing room in particular presents many unique challenges, not the least of which is to accommodate two very different environments — one for a large sow and one for newborn piglets. Allowing the sow room to be comfortable, with unrestricted access to feed and water, is the strength behind our A-Crate™ design. The crate also directs piglets away from the sow when they’re not nursing to minimize the risk of crushing.

As litters have gotten larger the size and quality of the piglets’ creep area are key to their safety and survivability. The Farmweld Warming Panel™ enhances both piglet comfort and safety by providing a warm resting spot away from the sow. This specialized environment helps piglets maintain their critical body heat, which keeps them healthy and growing.

Just as tracking sow lifetime productivity to more accurately manage breeding-herd productivity reflects pork production’s continuous evolution, Farmweld is committed to meeting producers’ changing needs. Each farm is different, and it’s important to identify options that fit your management style. Our goal is to provide a range of durable, high-quality, user-friendly equipment that provides solutions for each specific situation.

Whether you have questions or want to learn more about equipment for the sow, litter or growing pigs, Farmweld is here to help. Don’t hesitate to call us at 1-800-EAT-PORK (328-7675) or visit www.farmweld.com.

Frank Brummer
President
Farmweld, Inc.

SLP: The Next Step in Sow Productivity Measures

Sow lifetime productivity more fully represents total farm impact.

Pigs per sow per year (PSY) has become the gold standard of sow productivity measures. But what does it really tell you? If a female pig weans 12 pigs in her first litter, returns with an eight-pig litter and then falls out of the herd, her lifetime productivity is 20 pigs. Is that reasonable? Industry wide, the statistics are even worse.

Approximately 40 percent of female pigs that are selected for breeding have 19 or fewer pigs in their lifetime, points out Chris Hostetler, animal science director for the National Pork Board.

“PSY has been a critical factor in increasing litter size. However, collecting and analyzing sow-farm data is an evolving process, and sow lifetime productivity (SLP) represents the next step. It’s a better measure of the sow’s overall production efficiency and its impact on the enterprise’s profitability,” Hostetler adds.

SLP is defined as the total number of quality pigs a sow weans from the time she becomes breeding eligible until she leaves the herd.

The key is documenting when a gilt enters the breeding herd. “PSY ignores gilt retention and utilization,” says Steve Pollmann, DSP Consulting, Alpine, Utah. “Everyone handles gilt entry differently. Some farms don’t count a gilt until her first litter, which doesn’t capture the development costs or the gilts that never have a litter. So that waste is not effectively measured.”

Because gilts represent 20 percent to 25 percent of the breeding herd inventory, that data void is significant. For example, he points to Swine Management Services (SMS) data from 13 sow farms over three years that shows, on average, 10 percent
In Search of SLP Answers

Measuring sow lifetime productivity (SLP) is no small task. Like most outcomes within pork production, sow performance is multi-factorial. “SLP is driven by management, housing, health, nutrition and the animal’s physical makeup,” says Chris Hostetler, animal science director for the National Pork Board.

While pork producers continue to push pigs-per-litter higher, other issues such as pig robustness and uniformity and sow and pig mortality show there’s room for improvement. In response, Pork Checkoff created the Sow Lifetime Productivity Task Force in 2010, comprised of producers, researchers and allied-industry representatives. The task force identified and committed $2.7 million to study factors that can affect SLP, including sow nutrition, genetic selection, environment, animal welfare and animal health.

The timeline to identify strategies and tools to improve industry SLP was set at seven years. Today, many of the SLP projects are complete and information is filtering out of the SLP projects are complete and information is filtering out to the industry. However, other projects have expanded to continue the search for more details.

The proposed goals for the SLP project included:

- Improve SLP by 30 percent
- Increase average sow parity from 3.5 to 4.6
- Produce an additional 10 to 15 pigs per sow lifetime
- Expand SLP monitoring
- By achieving these goals, the annual return to the industry is estimated at $250 million.

“SLP is a big broad topic and there are a lot of things to dig into; we’ll be taking a deeper dive into the data and continue to identify answers to these hard questions,” says Clay Lents, research physiologist with USDA-Agriculture Research Service US Meat Animal Research Center. “That means a lot of gilts are not productive long enough to pay for themselves.”

In essence, the sows that do reach parities 3 to 6 (the productivity sweet spot) not only pay for themselves but also for the fall-out sows.

There’s also a downstream price to pay for gilt litters. Stalder says a conservative estimate is $5 per pig, and it could be as much as $15. It’s no secret that gilt litters have lighter birth weights, higher mortality, and poorer feed efficiency and growth rate than pigs from older sows.

The idea that breeding-herd turnover lets a producer tap into superior genetics is flawed, Stalder says. “You’re not leveraging the females that you have, and for commercial pigs the genetic change will be smaller than the parity effect,” he adds.

Stalder would like to eliminate automatic culling at parity 6 or 7. “You have so much money wrapped up in her development and maintenance,” he says. “Why not let her fail?”

### Accounting for Costs

It’s estimated that improving SLP would generate $250 million a year for the industry (see sidebar).

Think about the upfront investment tied up in a replacement female as well as the development costs. While exact costs vary, a solid estimate is that a replacement gilt costs $50 to $100 more to raise than a market gilt.

“A sow truly is a fixed-cost asset, and if you get 70 pigs out of her, the cost per unit is much lower than if you get 10 pigs,” Pollmann adds. “We need to push toward 50 to 60 pigs SLP versus where the industry has been at 25 to 30.”

He notes that producers would do a lot to lower their weaned-pig cost by $1 to $2 per pig. “But if they focused on SLP and got an extra half parity out of a sow, that’ll do it.”

According to Ken Stalder, Iowa State University swine geneticist, it takes 2.5 to 3 parities just to recoup a gilt’s development costs and become profitable.

“Replacement rates average 50 percent of sows annually, and the parity at removal ranges between 3.3 to 3.7,” says Clay Lents, research physiologist with USDA-Agriculture Research Service US Meat Animal Research Center. “That means a lot of gilts are not productive long enough to pay for themselves.”

<table>
<thead>
<tr>
<th>Gilt cost/ head</th>
<th>Average no. of parities</th>
<th>Pigs weaned/litter farrowed</th>
<th>Pigs/sow lifetime</th>
<th>Breeding stock cost/ weaned pig</th>
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</table>

Source: Steve Pollman, DSP Consulting

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$350

Our greatest need is to more effectively monitor gilt development and utilization so that it can be reflected in sow productivity measures,” Pollman adds, “and SLP is a better indicator of that.” He points to an SMS sow records evaluation illustrating the marginal relationship between PSY and pigs per sow lifetime (PSL), with only 23 percent of the variance in PSL explained by pigs weaned per mated female per year.

### Improving SLP decreases weaned-pig costs

Improving SLP decreases weaned-pig costs

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Steve Pollmann, DSP Consulting, Alpine, Utah

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Gilts Are Not Finishing Pigs

Gilt development is a critical step toward improving SLP. Yet too often, replacement gilts are still treated like finisher pigs, especially when it comes to feeding regimens.

“We need to think of gilt development in longer time frames,” Lents says. “It begins at birth and is often considered complete once the gilt has a heat-no-service (HNS).” But that’s much too short. His SLP study reveals that, because gilts are still growing, breeding-herd diets tend to be insufficient for gilts to develop adequate body reserves. In fact, they should be fed differently through the first litter and into the second.

“Gilt development is not about her reaching puberty or having a first litter, but also getting her past the parity-2 dip,” he adds. “In fact, 75 percent of the females that make it to parity 3 go on to reach parity 6.”

Bigger is not better when selecting gilts. For example, SLP research showed that gilts weighing 5 pounds or more at birth took longer to reach puberty, and early puberty is positively associated with fertility and longevity. Large gilts also are more likely to have body maintenance, structural and lameness challenges later in life, and lameness remains a significant reason (at 30 percent) why sows exit the herd.

“Modern gilts typically don’t have trouble achieving adequate growth rates. They can quickly exceed optimal body-weight breeding targets,” Lents says. “People tend to underestimate gilt weights; they look small next to mature sows.”

Good candidates are gilts with a lifetime growth rate of 600 grams per day from birth to selection and a breeding-weight target of 300 to 330 pounds. The reality is that both fast-growing and slow-growing gilts are at an increased risk of early removal from the herd, Hostetler points out.

To manage gilt growth rate, Lents’ research demonstrated that reducing the lysine-to-metabolizable-energy ratio of a diet while increasing fiber slowed growth but still allowed gilts to attain body weight and condition.

A gilt also needs to have one HNS (by 210 to 220 days of age) before it’s eligible for breeding and ideally should come into estrus during the first 30 days of boar exposure.

As for boar exposure, Lents and Pollmann offer these tips:

• Female pigs should have direct, in-pen contact with mature (>12 months) vasectomized boars.
• Allow 15 to 20 minutes of exposure or three to four minutes per female.
• Limit 15 to 17 gilts per boar, versus the more typical 20 to 25.
• Rotate boars to expose gilts to different boars.
• Limit the number of pens a boar works in a day and rest him every other day.

Featuring the Farmweld Gestation Package

Farmweld products are designed and built to keep the gestation environment safe and secure, not only for the sow but also for workers, through low side panels at the rear of the Farmweld Gestation Stall for ease of maneuverability and room to work.

Combining user-friendly design, top-grade materials and world-class workmanship, Farmweld provides value, performance and reliability. From gestation stalls and breeding gating to options for pen gestation, Farmweld understands the importance of equipment longevity and being able to use your investment for years to come.
Featuring the Farmweld Farrowing Package

Sow comfort and piglet safety are key to maximizing farrowing-room productivity.

Farmweld's Modular Cast Center Platform helps establish micro-environments within the farrowing crate and creep area to meet both the sow's and piglets' divergent thermal-comfort zones.

- **Farmweld Modular Cast Center Platform** provides a comfortable cool zone for the sow on a 24" wide (610 mm) center section made of durable cast-iron flooring.

- **The platform’s cast center is raised 1" (26 mm)**, giving piglets access to the sow’s teats to nurse easily, yet encourages piglets to move to the safety of the creep area.

- **Farmweld Warming Panels** are made with virgin polypropylene material and integrate seamlessly. These panels reduce draft to keep newborn piglets warmer, and the panels are textured to improve traction and stability.

- **The A-Crate has low back sides** — just 25" (635 mm) from the floor — giving the farrowing-room crew easy access to the sow and piglets without having to open or climb over gates. Finger-bar or bow-bar options are available.

- **Solid-rod construction provides superior durability** and the rounded corners enhance safety. The two-bolt assembly makes installation quick and easy. A-Crate sizes come in lengths of 7' (2.13 m), 7' 6" (2.29 m) and 8' (2.44 m).

What Can Producers Do?

Producers need to start monitoring SLP and asking their recordkeeping providers to run those numbers. “Or you can start with some indicator of gilt utilization,” Pollmann says, “such as what percentage of gilts never have a litter or what percentage of females have three litters.”

Meanwhile, more answers will be coming. For example, Stalder is analyzing sow metrics to determine which components can be used to develop an equation to make SLP prediction more accurate. Researchers within the SLP project are working to identify which gilt-developmental traits relate to productivity traits. The goal is to identify phenotypes to be used early in the gilt selection process.

“We know that litter of origin impacts sow longevity and productivity,” Lents says. “Also, colostrum levels at birth affect a gilt’s reproductive-tract development; those that fall short have fewer pigs when they become sows.”

Change is always a challenge; SLP may be a new concept, but it’s more than a passing fad. “Everyone is so fixated on PSY, they don’t consider the economic units that a gilt represents in terms of cost per market hog,” he adds. “That needs to change.”

The number of boars needed for a successful breeding-stimulation program is vastly underestimated. Another common misjudgment is properly sizing the gilt pool. “When you have less-than-desirable gilts entering the breeding herd, their longevity is at risk, which leads to higher replacement rates and more gilt litters,” Stalder says. He is developing a tool to help producers right-size their gilt-replacement flow.