Livestock Notes

Cost Savings In Energy Efficiency
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As cost-of-production and gross income margins narrow in the swine industry, producers are faced with the multi-faceted challenge of reducing costs. One potential cost-saving item that may be overlooked is conservation of electricity.

Consider the total number of kilowatt hours of electricity used by a single light fixture during a 24-hour period. A light fixture with a 100-watt bulb uses 0.8 kilowatt hours of electricity in eight hours. At 7.5 cents per kilowatt hour, this single fixture would cost six cents per day to operate, or $21.90 per year. Using a 40-watt incandescent instead of a 100-watt bulb would result in a savings of $13.14 per fixture. In a 2,400-sow farrow-to-feeder operation with approximately 400 fixtures, this simple change amounts to an annual savings of $5,256.

What if we changed all fixtures from 100-watt incandescent fixtures to 40-watt fluorescent? The annual energy savings would remain about the same, but we would reap two additional benefits — increased life-span of the bulbs and increased light output. A 40-watt fluorescent light tube has an average lifespan of approximately 12,000 hours, whereas a 100-watt incandescent light has an average lifespan of approximately 750 hours. In a typical year, an incandescent fixture would require 3.9 bulbs at a cost of 12 cents per bulb, or 47 cents per fixture per year. But a fluorescent fixture would require only 0.25 bulbs at a cost of 99 cents per bulb, or 25 cents per fixture per year. The result? A net savings of 22 cents per fixture or approximately $88 annually in this example. Although this is minimal, using 40-watt fluorescent tubes versus 100-watt incandescent bulbs increases the amount of light from 1,750 to 3,200 lumens — an 82 percent improvement.

There are a few potential shortcomings to this proposed changeover. We have not accounted for the cost of replacing incandescent fixtures with fluorescent fixtures. Also, locating or designing water-tight/waterproof fluorescent fixtures may be cost-prohibitive. Alternatively, incandescent bulbs could be replaced with fluorescent bulbs that work in typical incandescent fixtures. You'll want to investigate the costs before making a significant change. Regardless of the type of bulbs and fixtures used currently, the potential exists to reap considerable sasvings by choosing alternative lighting.

Source: Carroll's Pig Tales & Turkey Talk, Vol. 2, No. 1; Rhonda Ezzell, editor.

Immunocastration Of Boars
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Now more than ever, questions are cropping up about the necessity of typical management practices in swine units, due primarily to enhanced public awareness of animal welfare issues. Routine castration of boars destined for normal market channels is one such practice. The idea of alternative methods of castration is not new.

Scientists have investigated several methods to reduce the compounds which are responsible for the pungent odor of boar meat (primarily testicular steroids and skatole, a product of tryptophan degradation in the pig's digestive system).

One alternative method of castration is immunization against hormones that affect testicular steroid production. Up until now, the problem with this method has been that immunization schedules are ineffective in practical swine production situations.

Researchers from France and Canada recently evaluated the potential for immunocastration of boars by administering antiluteinizing hormone-releasing hormone (anti-LHRH) at 65 pounds and again at 195 pounds. This treatment was designed to provide minimal effect during most of the growing period in order to maintain advantages of boars in growth, feed efficiency and carcass composition; and to provide maximal effect just prior to slaughter at 230 pounds, when levels of testicular steroids and skatole begin to exceed those deemed acceptable by consumers.

As expected, boars grew faster, ate less, and converted feed to body weight gain more efficiently compared with barrows. However, there was no difference due to immunization status of boars for traits associated with growth performance. For all of the carcass traits studied, control boars were superior to barrows, but there was no difference between control and immunized boars for carcass traits.

Immunization of boars greatly reduced development of the reproductive organs and associated sex glands compared with control boars. Immunized boars had smaller testes, epididymides, seminal vesicles, and bulbourethral glands. Furthermore, boars immunized against LHRH had lower concentrations of testosterone in blood at 230 pounds and lower concentrations of androstenone in fat, but the concentration of skatole was unaffected by immunization status. None of the immunized boars, but nearly two-thirds of control boars, had androstenone levels that would be considered unacceptable for human detection and consumption.

The reported immunization schedule demonstrations the potential for more widespread use of boars for meat production by reducing levels of testicular steroids partly responsible for *boar taint*, without compromising advantages in growth performance and carcass composition of boars versus barrows.

Source: M. Bonneau et al., *J. Anim. Sci.* 72:14.