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Successful swine producers pay careful attention to the breeding herd. The members of our producer panel will present three approaches to managing reproduction. Their ideas are of particular interest since each is a successful manager. This paper will serve as an outline of topics to be discussed.

Basically the same problems occur in all common management systems; however, particular problems may be exaggerated under certain conditions. A well-known example is failure of gilts to reach puberty at an acceptable age. While some producers in all types of facilities experience this problem, complaints are considerably more frequent when gilts are bred in confinement. Because of confinement's negative effect, a good deal of research is in progress to determine what factors can influence puberty in gilts. Since the problem of delayed puberty also occurs in outside lots, this knowledge should be beneficial to all hog producers. Similarly, studying the way producers handle replacement gilts in different types of facilities should suggest ways of improving management under all circumstances.

The discussion today will focus on three areas: (1) management of replacement gilts, (2) rebreeding of sows after weaning, and (3) management of boars.

Delayed puberty in gilts is perhaps more apparent today because many producers are breeding

gilts at earlier ages, so that those not exhibiting estrus at 6-7 months are more obvious. The effects of social factors on age at puberty have been well established. Researchers at the University of Nebraska and North Carolina State University have shown that exposure to boars can dramatically decrease age at first estrus. Mixing unfamiliar gilts and relocation to a new pen are also beneficial although weaker stimuli. A recent report from Nebraska indicates that while these same factors advance puberty in confinement they are not able to overcome all of confinement's adverse effect. It is likely that other social and environmental factors which stimulate or suppress puberty will be identified as a result of current research.

However confinement exerts its suppression, the effect can easily be overcome by moving gilts to outside pens. Undoubtedly a gilt's endocrine system is involved in puberty, and recent research at the University of Missouri indicates a surge of estrogen soon after gilts are moved from confinement.

Sows normally return to estrus 4-7 days after weaning; however, exceptions do occur. Problems are most common in the summer and early fall, and little is known of the causes or of ways to control problems. Common management is to increase the number of females in the breeding herd to compensate for decreased occurrence of estrus and conception. Recent ideas in sow management

include withholding feed and water to stimulate estrus. However, university research indicates no effect on the occurrence of estrus. Another idea is to decrease milk secretion, and this may be useful, particularly with early-weaned sows.

Boars also deserve special attention. Approaches to boar management vary considerably. In general there is a tendency to use more boars and to breed sows and gilts more frequently. This likely pays off in higher conception rates and greater litter size. Becoming more widely recognized are differences in individual boar fertility. Some boars simply get lower conception rates and smaller litters. Since semen from these boars does not necessarily appear inferior, and it takes a good many litters and accurate records to identify subfertile boars, most producers look for other ways to minimize the problem. This can be done by mating to two different boars, or, with pen mating, by rotation of boars. With artificial insemination, mixing semen from two or more boars has been shown to improve fertility.

Problems are also experienced with boar libido. Rotating the boars in pen mating may help, and maintaining boars in a healthy, thrifty condition is undoubtedly important. Young boars may be a particular problem. Although there is some variation among boars in rate of sexual development, problems can be expected if boars younger than 7½ to 8 months of age are routinely used. Boars must learn to identify females in heat as well as learn mounting and breeding behaviors. Young boars vary in their aptitude, but many producers feel it is a good idea to be present during the first few matings to assure success. A successful mating will do much to establish the correct reproductive behavior in the young boar.

Also, the producer can identify any apparent physical problems. Of course, the detrimental effect of hot summer weather on fertility and libido is widely recognized, and there are several different methods available to keep boars cool.