

RETURN TO CYCLIC ACTIVITY OF SOWS AFTER FASTING

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Complete restriction of all food intake of sows for 2, 3, or 4 days after weaning tended to increase the interval from weaning to estrus in sows. It did not, however, have a detrimental or beneficial effect on other measures of reproductive performance. These results would indicate this management practice of fasting to stimulate estrual activity is not valid.

Recently, questions have been raised as to the value of imposing a fasting period upon weaned sows. This management practice has been infrequently employed by producers throughout the Upper Midwest. It was thought that fasting would hasten the "drying-off" process of the weaned sow, enabling her to return to estrual activity sooner. Lactating sows show no cyclic activity; however, upon weaning, estrus (sexual receptivity) will occur in four to ten days. Few studies have examined the effects of fasting at weaning on swine reproduction.

The practice of fasting sows after weaning has been investigated by Brooks and Cole (1973). Using a 2 x 2 factorial design, feed intake in the last week of lactation and feed intake 24 hours after weaning were examined for their effect on return to estrus and number of piglets born. These researchers examined either high (5.4 kg) feed intake or low (2.3 kg) feed intake during the last week of a six-week lactation and fasted the sows for 0 or 1 day after weaning. There were no significant effects of treatment on days to return to estrus. However, a trend for increased time to return was noted in fasted animals. Number of piglets born did not differ significantly. Their findings suggest that the practice of fasting does not affect post-weaning reproductive performance.

After a 42-day lactation period, Brooks and Cole (1972) fasted sows for 24 hours following weaning, then allotted the sows onto one of three feeding levels (1.8, 2.7 or 3.6 kg feed/day) until the day of mating. The number and weight of pigs born was not significantly affected by treatment. There was a tendency for litter size to increase with each increase in feeding level (9.4, 10.4 and 11.6 pigs born for 1.8, 2.7 and 3.6 kg/feed/day).

In a survey of non-infectious infertility, MacLean (1969) stated that complete starvation and water deprivation for 24 hours on the day of weaning was the most effective method of stimulating early estrus onset as compared to a 24-hour fast with water available and a 24-hour fast in combination with a dose of Epsom salt. MacLean conjectured that complete starvation and water deprivation stimulates the "drying-off" process, enabling the sow to return to estrus in a shorter interval.

A research project was initiated at the North Dakota Agricultural Experiment Station at Fargo to determine the influence of fasting on sow reproduction. The experiment reported herein was designed to determine the

effect of a post-weaning fast on the sow's ability to return to estrual activity.

PROCEDURE

At weaning, Duroc sows were randomly assigned to a fasting interval of either 0, 2, 3 or 4 days. This fasting period was initiated at weaning. Sows were weaned onto an open-lot dirt pen that contained a straw-bedded shed for shelter. A maximum of 20 sows were penned together. When not fasting, sows received 2.3 kg feed (16% crude protein) daily. The sows were checked for estrual activity twice daily, 0800 and 2000 hours, and were bred by Duroc boars 12 and 24 hours after the onset of estrus. During the winter months, the evening check was performed at 1600 hours because of darkness. Records of weaning date and day of first estrus were kept for each sow. A total of 99 sows contributed data in this experiment.

RESULTS AND DISCUSSION

Table 1 contains the data obtained from this experiment. Fasting (2, 3, or 4 days) caused an increase in the interval from weaning to the first estrus. The control group (0 day fast) required an average of 5.2 days to return to estrus after weaning, compared to 6.4, 6.9 and 5.8 days for the 2, 3 and 4 day fasted groups, respectively. Upon statistical analysis these differences were not significant. No other problems were encountered in any of the treatment groups.

The results obtained in this experiment suggest that the management practice of fasting delays the onset of estrus after weaning. Hog producers usually want weaned sows to return to estrus in as short a time as possible. This allows for prompt re-breeding and another pregnancy to be underway. In this way the farrowing interval (time between two consecutive parturitions) would be at a minimum, allowing for maximum productivity for each sow.

If for some reason, such as lack of boar power, the producer wishes to delay the onset of the postweaning estrus, fasting for three days would delay estrus for approximately one day, as illustrated by the present results, compared to a non-fasted animal. This response depends on many factors, probably the most significant

being lactation length. As lactation length increases, the interval from weaning to estrus decreases. The mean lactation length used in the present experiment was 27 days.

Data are now being processed to determine what effects fasting has on ovulation rate, embryonic mortality and number of pigs born alive at the subsequent farrowing. Allrich and Tilton (1978), using preliminary data, have indicated that fasting may be detrimental to the aforementioned factors.

SUMMARY

Ninety-nine Duroc sows were utilized in an experiment to determine the effect of a postweaning fast on the weaned sow's ability to return to cyclic activity. Any degree of fasting (2, 3 or 4 days) increased the interval from weaning to first estrus when compared to the control animals (0 day fast). The control group required an average of 5.2 days to return to estrus after weaning, compared to 6.4, 6.9 and 5.8 days for the 2, 3 and 4 day fasted groups, respectively. These differences were not statistically significant.

From present results, it appears that fasting sows at weaning should not be recommended due to its effect of delaying the return to estrus. Further research needs to be conducted on the feeding level of the sow during the interval from weaning to estrus. It may be that an increased feeding level in this interval would be the most beneficial.

TABLE 1. DAYS TO RETURN TO ESTRUS AFTER WEANING

Fasting Period (Days)	Number of Sows	Days to Return (Mean)
0	28	5.2
2	22	6.4
3	21	6.9
4	28	5.8

References Cited

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NONRESIDENT WATERFOWL HUNTING LEASES

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One alternative available to hunters faced with dwindling hunting opportunities is to lease hunting rights from landowners. In 1976, 18 percent of nonresident waterfowl hunters in North Dakota paid for the right to hunt on private land at an average cost of \$26 each.

Most Americans have considered hunting a basic right. Present day conditions often interfere with the freedom of hunters to pursue game as they did in bygone years. Increased population, dwindling wildlife habitat, and pressure by groups opposed to killing wild animals have all brought pressure to bear on the freedom of hunters. One of several alternatives available to hunters

is to lease hunting rights from landowners. In North Dakota this generally implies leasing from farmers who own wetlands or wildlife habitat.

There are several advantages to leasing hunting rights. One advantage to the hunter is that it assures him of a place to hunt. He will not have to spend hunting time trying to get permission to hunt from landowners. Also, the lessee, by virtue of leasing a selected piece of land, expects to have a fairly good chance of hunting success, better than at a place where he could get permission to hunt without paying. Because of this, leasing

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