

RESEARCH IN PROGRESS

Effect of Feeding Choline and Dichlorvos to Gestating Sows

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Reproductive efficiency, the number of pigs marketed per sow kept for breeding, is the most important economic factor in swine production. Therefore, it is essential that all breeding females conceive promptly, farrow large litters and wean a high percentage of pigs farrowed. The feeding of nutritional supplements is one plausible method of improving reproductive efficiency.

Previous research at the Oklahoma Agricultural Experiment Station and other institutions has shown that feeding high levels of choline (approximately 350 mg per lb of diet) to bred sows throughout the gestation period may result in increased litter size at birth and weaning and heavier litter weights at weaning. However, previous research at the Oklahoma Agricultural Experiment Station and other institutions did not show choline to be beneficial in reducing the incidence of the spraddle leg syndrome in baby pigs as reported several years ago in the popular press.

Research at other institutions has also shown that the feeding of the anthelmintic, dichlorvos (2, 2-dichlorovinyl dimethyl phosphate) at approximately 250 mg per lb of diet during the last 30 days of gestation may result in improved reproductive performance. Improvements usually observed included increased litter size at birth and weaning, heavier litter weights at birth and weaning and increased mean birth or weaning weight. Research also reveals that the improvement in reproductive performance is apparently not the result of the anthelmintic effect of dichlorvos.

There appears to be no previous research conducted that presents any information as to whether an additive effect would occur on reproductive performance if both choline and dichlorvos were fed to gestating females. Thus, this project was initiated in November, 1980, at the Southwestern Livestock and Forage Research Station, El Reno (Fort Reno) to determine whether there is an additive or interactive effect on litter size at birth, litter size at weaning, birth weights and weaning weights when supplementing diets for gestating sows with choline and/or dichlorvos.

An experiment, involving two replicates of 100 brood sows each, has been conducted to date. All sows were fed a 14 percent and 16 percent crude protein, grain sorghum-soybean meal type ration during gestation and lactation, respec-

tively. The sows in each trial were divided into four experimental treatments as follows:

1. Control. No supplemental choline or dichlorvos was fed during gestation.
2. 350 mg of choline per lb of diet during the entire gestation period was fed.
3. 250 mg of dichlorvos per lb of diet during the last 30 days of gestation was fed.
4. Combination of treatments 2 and 3 was fed.

Data collected included total number of pigs at birth, number of live pigs at birth and number of live pigs at 21 and 42 days of age. Individual pig and litter weights at birth, 21 and 42 days were also collected. Fecal examination for gastrointestinal parasites in each sow and two randomly selected pigs from her litter when 42 days of age was also conducted. One randomly selected pig from each of 10 different sows in each treatment was examined at slaughter for evidence of parasite migration.

Data from the two described trials will be analyzed to study the effects of supplemental choline and dichlorvos and the interaction of the two on reproductive performance. In addition, it is planned for two additional trials involving 100 brood sows each to also be conducted.

Utilization of Wheat Silage in Wheat and Bermudagrass Stocker Programs

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Problems associated with cattle grazing wheat pasture have been described for many years and include wheat pasture poisoning of cows and frothy bloat of stocker cattle. Although these problems may result in substantial economic losses, losses incurred by wheat pasture stocker operators as a result of poor stocker weight gains, due to (1) inadequate fall and/or winter wheat forage and (2) stockers being out of feed because of snow and/or ice cover of wheat forage, while being much less dramatic, are probably greater. Identification of sound feeding programs for wheat pasture stockers, therefore, has the potential of increasing total beef production from wheat pasture and adding stability to wheat pasture stocker operations.

Large variations in the amount of forage available for grazing also represents a critical management problem in bermudagrass stocker programs. Stocking rates designed for the periods of lower forage production coupled with hay removal during periods of peak forage growth represent the usual approach to this