



# Ask the VMD

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### SMEDI spells problems

#### A reader asks:

What is SMEDI and what can be done to prevent this problem in young sows?

#### Dr. Trayer comments:

The letters SMEDI stand for stillborn mummified fetus embryonic death and infertility. These are symptoms and clinical findings associated with a viral infection or exposure in what previously was thought to be a disorder occurring in young sows — gilts in the age range of 6 to 10 months.

Most commonly the virus identified is porcine parvovirus which affects first litter gilts, and can be found in boar semen. (It is not known what the implications of the virus in the semen are, but it is a consideration when using artificial insemination methods.)

The actual diagnosis of parvovirus in the herd, besides seeing the clinical problems of stillborn, mummified litters, can be accomplished by blood sampling older sows and testing for parvovirus antibodies. It has been found 99 percent of the time the herd will show positive test results, confirming the farmer's suspicions.

Another diagnostic tool is sub-

mission of mummified or stillborn fetuses to the state's laboratory for diagnostic workup. This requires keeping the fetus on ice — the fetus should be frozen immediately. This, along with the blood sample, will help identify the problem.

The clinical signs associated with parvovirus are variable and depend upon the stage of pregnancy of the female.

If the female in heat is first exposed to the virus after being isolated from adult breeding stock until the time she is brought into the breeding area, the fetuses will be resorbed within the first 35 days of pregnancy and the gilt will come back in heat on an irregular cycle. This is perceived to be an infertility problem, where in actuality the young gilt is developing an active immunity to the virus.

If a susceptible female between 35 and 70 days pregnant is exposed to parvovirus for the first time, the fetuses cannot be resorbed completely because there is skeletal mass. Hence, farmers will often find dehydrated fetuses, called mummies. It is unlikely for the mummies to be expelled at this time, and the gilt will go to term. Near farrowing time the gilt will not exhibit the normal characteristics of parturition and, a few

days later, may expel these mummified fetuses.

When exposed after 70 days into pregnancy, there is seldom any effect on the developing fetuses and the litter should be normal.

Often what happens is some of the litter is exposed, resulting in litters containing resorbed fetuses (blood clots), varying sizes of mummified fetuses and normal fetuses. This shows a varied response to the virus, with the gilt developing an immunity while being exposed and saving some of the pigs.

The only sign that can be

detected when a gilt is first exposed to the virus is a slight elevation in temperature. They generally don't go off feed or show any other external signs until later down the road when reproductive problems become evident.

The answer to the problem in the past has been to practice the 30-day exposure period where new breeding stock is brought in, kept in waiting 30 days before breeding, exposing the gilts to fresh manure of mature sows and boars in order to allow active immunity development.

Most commonly, the offspring of animals, that have been exposed to the virus receive passive immunity through the sow's colostrum in the milk. This immunity lasts somewhere between 5½ to 7 months. Selecting young breeding stock less than 7 months old and breeding them early increases the SMEDI problem because the animal has not been able to develop active immunity since the passive immunity has not

worn off completely.

When or at what level is parvovirus a serious problem?

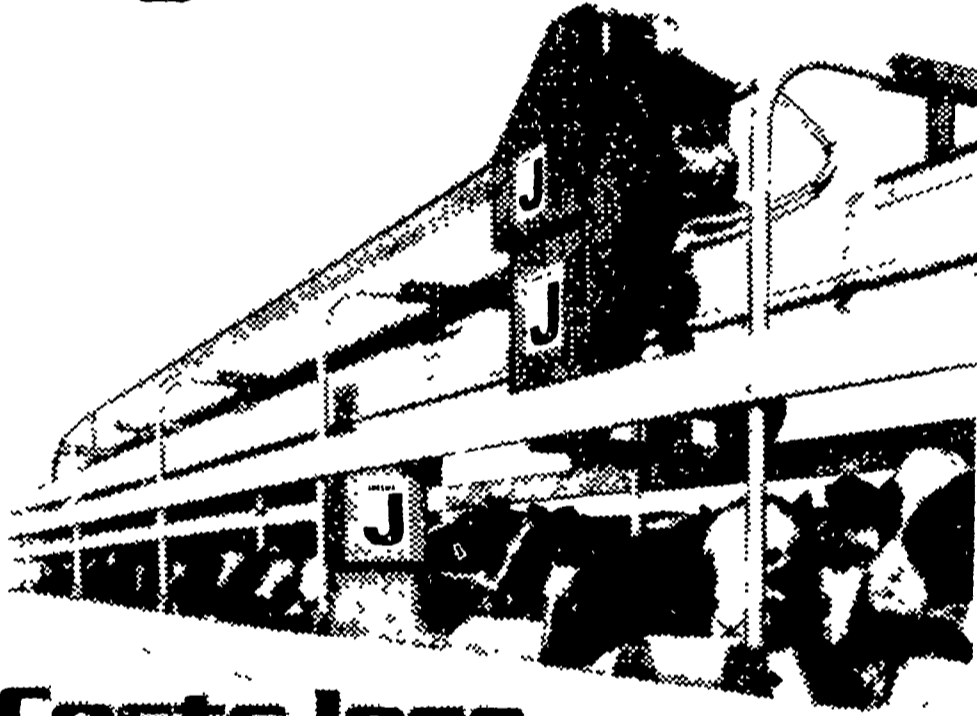
Usually on large farrowing numbers, somewhere between 0.1 percent of the litter turning up mummified signals a problem. Farmers suspecting SMEDI should not confuse this problem with stillborns, 'lepto' infection, iron deficiency, or toxicity developments.

In the past, the only method for combating parvovirus in the herd was to feed the young breeding stock fresh manure from the mature herd. In the near future there may be an effective vaccine available for young breeding stock. This vaccine is being tested at the University of Minnesota.

Reports in literature of European studies done on large commercial herds question the effectiveness of feeding fecal material of mature breeding stock to gilts in order to establish immunity. Two problems identified

(Turn to Page D30)

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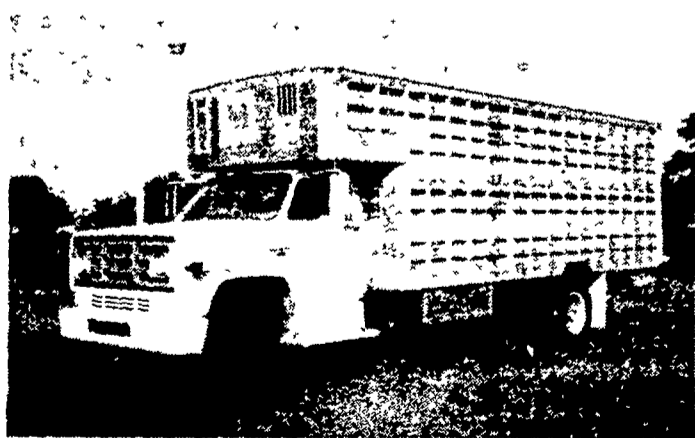
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