A SURVEY ON PERINATAL MORTALITY IN YOUNG MINK

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ABSTRACT

The incidence of perinatal mortality in mink was investigated in commercial farms in Argentina. Of a total of 2122 kits, 548 of those that were born alive died within the first four weeks of life (25.8% mortality) and there were also 62 stillborn kits. Death resulted from a variety of causes of which septicaemia, starvation and hypothermia were the most common conditions. The highest mortality occurred within the first week of life (61.9%). The lesions found in young kits at post-mortem examination are described and related to contributory factors such as weight, litter size and age at death.

Keywords: aetiology, mink, mortality, perinatal

INTRODUCTION

The survival rate of kits between birth and weaning at four weeks of age is a very important factor in assessing the productivity of mink (Stepanenko, 1977; Udris and Olden, 1977; Wenzel, 1978; Löliger and Mathes, 1979; Einarsson, 1980, 1982). There are some peculiarities in the physiology and husbandry of young mink which may predispose to heavy mortality, and the use of intensive management systems increases the prevalence of those diseases which occur when kits are crowded together. The young mink is a very rapidly growing animal. It will double its birth weight in a few days and achieve twenty times this weight within a period of about four weeks. As a result of its rapid growth, its food demands are high, any nutritional or husbandry change being immediately reflected in the rate of growth and sometimes in the health of the mink.

Information on the prevalence of disease in young mink up to four weeks of age is scanty compared with that available for adults. The following survey was carried out in order to investigate both the causes of death amongst preweaned mink and their relative prevalence.

MATERIALS AND METHODS

The animals studied belonged to two similar commercial farms with populations of about 10 000 standard wild mink on each farm. Mink are weaned by removing the mother from the cage when the young are four weeks old. The food is made up by the farmer and contains fresh fish offal (55%), slaughterhouse offal (13%), poultry offal
(10%), fish meal (3%), bovine blood (5%), corn gluten (4%), wheatgerm (8%), dextrose (2%), salt, vitamins and minerals. Even before they are weaned the kits are introduced to this ration as small quantities are placed in the bottom of the cage.

The causes of mortality were determined in all kits which died between birth and four weeks of age. All the mothers were serologically negative for Aleutian disease by the iodine-agglutination test (IAT) but were all positive by counterimmunoelectrophoresis (CIEP). Each kit was weighed before a complete post-mortem examination was made. Samples of brain, liver, spleen, heart and kidney were taken for routine bacteriological and histopathological studies.

The causes of death in the kits born alive were classified as starvation/hypothermia, trauma/cannibalism, septicaemia, other infectious diseases, malformations and unknown. The starvation/hypothermia group included those kits presenting with loss of weight, signs of dehydration, such as shrunken skin and blood viscosity, and with no gastrointestinal contents. Those losses were suspected to be caused by malnutrition in part due to poor milk production by the mother. Kits were included in the trauma group if they showed evidence of overlaying and cannibalism by the female. External indications of trauma included cyanotic patches, congested and swollen areas anywhere on the surface and vomit about the face. Internal evidence included extensive haemorrhage in the body cavities, subcutaneous extravasation, fractures and rupture of the liver. It was impossible to distinguish easily those kits which had been savaged by their mothers while they were still alive (‘half-eaten kits’) from those eaten after they had already died from another condition, unless a detailed post-mortem examination was performed. Also, it was difficult to be precise in cases of overlaid but untraumatized kits, except in those cases which showed clear signs of a suffocation, such as congestion and oedema of the lungs and frothy fluid in the bronchial tree. Septicaemia was incriminated when a micro-organism was isolated in pure culture from all samples cultured. The ‘other infectious diseases’ group included losses due to localized bacterial infections such as pneumonia, enteritis, pleurisy, boils or head abscesses and infected wounds. Malformations included hydrocephalus, umbilical hernia, renal agenesis and anasarca congenita or ‘clumsy pup’. Kits which on post-mortem examination could not be ascribed to any of the above groups, because they showed neither macroscopic or microscopic lesions, were designated ‘unknown’. Kits were defined as stillborn when the lungs were completely atelectic, but there was no gross decomposition of the tissues.

The kits were weighed at birth (during the first 24 h of life), after 1, 2, 3 and 4 weeks of life and when death occurred. The data on litter size and average birth weight relating to kit survival were statistically analysed by the $\chi^2$ test.

RESULTS

A total of 2122 kits were born from 461 mated females (average litter size: 5.71) or 337 whelped females (average litter size: 6.29), and 548 of these kits died between birth and four weeks of age. The mortality was thus 25.8%. There were also 62 stillborn kits.

Of the 337 whelped females, 12 (3.6%) died during the first month after parturition and their 46 kits were distributed among the smallest litters.