

## Processionary Caterpillars are an Abortifacient in Mares.

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On a number of horse studs in NSW between April and October 2004, mares from 4-months gestation to term aborted fetuses with unusual and consistent clinical and pathological signs. The term equine amnionitis and foetal loss (EAFL) was applied to the condition to reflect the typical presenting signs. EAFL cases showed an unusual pattern of inflammation with inflammatory changes mainly involving the amnion (amnionitis) and amniotic portion of the umbilical cord (funisitis). In more chronic cases, inflammatory changes appeared to initiate within the amnion and extend to involve the allantois, and in some chronic cases, the chorion. Mares showed little signs of illness or impending abortion.

Similarities between the clinical and pathological features of EAFL and a condition in the United States of America (Mare Reproductive Loss Syndrome, MRLS) has led to consideration of caterpillars as a possible risk factor in Australia. Intubating mares with the Eastern tent Caterpillars induced MRLS. Eastern Tent Caterpillars do not occur in Australia though a number of other caterpillar species with setae or hairs are reported to occur in EAFL affected regions including processionary caterpillars (*Ochragaster lunifer*), white cedar moth caterpillars (*Leptocneria reducta*), and the mistletoe brown tail moth caterpillar (*Euproctis edwardsi*). Processionary caterpillars (PC) were the most abundant species reported in regions where EAFL cases had occurred.

Two studies have been performed to investigate the relationship between PC ingestion and EAFL. In experiment 1, eight mares of approximately 6 months gestation were used and four of the mares were intubated via nasogastric tube with 100g of macerated PC in distilled water, once daily for five consecutive days. In the second experiment, mares of approximately 7 months gestation were given five daily doses of macerated, shed PC exoskeleton in distilled water via nasogastric tube. Twelve mares were allocated to four groups of three mares. Each group of three mares received either 0, 1, 2 or 5g of shed exoskeleton per day. In deciding on the exoskeleton dosage the following values were used; 100g PC is approximately 100 caterpillars and 100 shed exoskeletons weigh approximately 1.0g.

In experiment 1, three of the four mares aborted within 11 days of the initial treatment. The fourth mare was euthanased at day 8 while still pregnant and was observed to have ante-mortem signs consistent with a compromised foetus which returned similar changes on post-mortem to the three aborted fetuses. In experiment 2, one, one and two abortions occurred from treatment groups receiving 1, 2 and 5g of exoskeleton, respectively. One foal from each of the 1g and 2g groups was abnormal at delivery based on clinical and post-mortem examination. One mare from each exoskeleton treatment carried a foal to term. However the foal in the 5g group had leucocytosis at birth. In both experiments, all control mares foaled normally.

These results provide experimental evidence that PC can induce pregnancy loss in mares and that shed exoskeleton can also cause abortion. Gross pathology and bacteriology were similar to that seen in cases of EAFL.

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