**Early neonatal lamb mortality: postmortem findings**

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**Table S1** Number of breeding ewes, predominating breed, and details of housing and management in study flocks.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Number of breeding ewes | Housing during lambing | Lambing as 1-year-old | Known date of mating | Ultrasono-graphic pregnancy diagnosis | Grouping of pregnant ewes | Flooring in claiming pen | Cleaning of claiming pen | Checking for the ability to suckle |
| Flock 1 | 200 | Insulated | Yes | Yes | Yes | Yes | Straw | Every lambing | Yes |
| Flock 2 | 27 | Non-insulated | No | No | Yes | No | Straw | Now and then | Partly |
| Flock 3 | 65 | Non-insulated | Yes | Yes | No | Yes | Straw | Every lambing | Yes |
| Flock 4 | 105 | Insulated | Yes | Yes | Yes | Yes | Straw | Every lambing | Yes |
| Flock 5 | 165 | Insulated | Yes | Yes | Yes | Yes | Straw | Every lambing | Yes |
| Flock 6 | 285 | Insulated | Yes | Yes | Yes | Yes | Straw | Every lambing | Yes |
| Flock 7 | 550 | Both | Yes | Mainly | Yes | Yes | Straw | Now and then | Yes |
| Flock 8 | 225 | Non-insulated | No | No | Yes | Yes | Straw | Now and then | Yes |
| Flock 9 | 124 | Non-insulated | Yes | Yes | Yes | Yes | Straw | Never | Partly |
| Flock 10 | 65 | Insulated | Yes | Yes | Yes | Yes | Wood | Now and then | Yes |
| Flock 11 | 150 | Insulated | Yes | Yes | Yes | Yes | Straw | Every lambing | Yes |
| Flock 12 | 400 | Insulated | Yes | Yes | Yes | Yes | Mesh | Now and then | Yes |
| Flock 13 | 650 | Insulated | Yes | Yes | Yes | Yes | Mesh | Never | Partly |
| Flock 14 | 330 | Non-insulated | Yes | Yes | Yes | Yes | Mesh | Now and then | Yes |
| Flock 15 | 360 | Non-insulated | Yes | Mainly | Yes | Yes | Straw | Now and then | Yes |
| Flock 16 | 491 | Non-insulated | Yes | Yes | Yes | Yes | Straw | Every lambing | Yes |
| Flock 17 | 279 | Insulated | Yes | Mainly | Yes | Yes | Mesh | Every lambing | Partly |

**Table S2.** Number (n) of cases and details of major lesions found in lambs with trauma as the main cause of death1.

|  |  |  |
| --- | --- | --- |
| Trauma | Major lesions | n |
|  |  |  |
| Thorax | Rib fractures , with or without haemothorax (<50 ml) | 17 |
|  | Rib fractures, haemothorax (>50 ml) | 5 |
|  | Haemothorax (>100 ml), source lung or mediastinum | 3 |
|  | Pulmonary haemorrhage, haemothorax (>50 ml) | 2 |
|  | Pulmonary oedema and haemorrhage | 1 |
|  | Rib fractures, perforation of left ventricle, tamponade | 1 |
|  | Lung rupture | 1 |
|  |  |  |
| Abdomen | Liver rupture, haemabdomen (<75 ml) | 8 |
|  | Liver rupture, haemabdomen (>75 ml) | 3 |
|  |  |  |
| Thorax and abdomen | Rib fractures, liver rupture, haemabdomen (<50 ml) | 2 |
|  | Rib fractures, pulmonary haemorrhage, liver rupture | 2 |
|  | Rib fractures, haemabomen (>75 ml) | 1 |
|  |  |  |
| Other combined lesions | Rib fractures, subdural haemorrhage (brain) | 1 |
|  | Haemabdomen (200 ml), subdural haemorrhage (brain) | 1 |
|  | Subdural haemorrhage (brain), liver rupture and haemabdomen | 1 |
|  | Fracture of cranium above eye, subdural haemorrhage (brain) | 1 |
|  |  |  |
| Other | Subdural haemorrhage (brain) | 2 |
|  | Perforation of eye with arterial haemorrhage | 1 |

1Two lambs were euthanized due to low vitality

## **Table S3.** Number (n) of cases and details of major lesions found in lambs with congenital malformation as the main cause of death1.

|  |  |  |
| --- | --- | --- |
| Congenital malformation | Major lesions | n |
|  |  |  |
| Oral cavity | Laryngo-oesophageal fistula | 1 |
|  |  |  |
| Thorax | Diaphragmatic hernia | 2 |
|  |  |  |
| Abdomen | Umbilical hernia | 4 |
|  | Atresia ani | 4 |
|  | Atresia jejuni | 2 |
|  | Malpositioned duodenum | 1 |
|  |  |  |
| Musculoskeletal | Arthrogryposis | 2 |
|  | Torticollis | 2 |
|  | Brachygnathia | 1 |
|  | Scoliosis | 1 |
|  | Short digital flexor tendons | 1 |
|  |  |  |
| Central nervous system | Hypoplasia of cerebellum | 1 |
|  | Hydrocephalus internus | 1 |
|  | Meningoencephalocele, cranium bifidum | 1 |
|  |  |  |
| Multiple |  | 3 |

1Fourteen lambs were euthanized by the farmer