Table S1. The distribution of the 49 cattle farms by the answers to the questionnaire, and the number and proportion of them with at least 1 of the investigated calves testing positive for *Cryptosporidium* spp.

|  |  |  |  |
| --- | --- | --- | --- |
| Question | Answer options | *N* farms selecting this answer | Of the farms, *Cryptosporidium* spp.-positive farms, *n* (%, 95% CI) |
| Is the production organic? | No | 46 | 29 (63·0%, 48·49–76·00) |
|  | Yes | 3 | 2 (66·7%, 13·20–98·33) |
| Farm size (number of cattle on the farm)2 | ≤150 | 10 | 4 (40·0%, 14·23–70·89) |
|  | >150 | 38 | 27 (71·1%, 55·26–83·74) |
| Are there cattle of native cattle breeds in the herd? | No | 45 | 28 (62·2%, 47·49–75·42) |
|  | Yes | 4 | 3 (75·0%, 24·23–98·75) |
| Has the farm imported cattle from abroad during the previous 5 years? | No | 47 | 29 (61·7%, 47·29–74·71) |
|  | Yes | 1 | 1 (100·0%, 5·00–100·00) |
| Does the farm currently raise or has the farm previously raised pigs in addition to cattle? | No | 47 | 31 (66·0%, 51·62–78·38) |
|  | Yes | 2 | 0 (0·0%, 0·00–77·64) |
| Does the farm currently raise or has the farm previously raised sheep and/or goats in addition to cattle? | No | 46 | 29 (63·0%, 48·49–76·00) |
|  | Yes | 2 | 1 (50·0%, 2·50–97·50) |
| Are there separate pens used for calving?1\*\*,2\*\*,3 | No | 21 | 9 (42·9%, 23·31–64·26) |
|  | Yes | 26 | 21 (80·8%, 62·40–92·59) |
| How old are the calves at the time of weaning?1,2,3,4 | 14-30 days1,2,3\*\*\*,4\* | 8 | 6 (75·0%, 38·83–95·57) |
|  | 31-60 days | 8 | 4 (50·0%, 18·41–81·59) |
|  | 61-90 days | 21 | 14 (66·7%, 44·90–84·10) |
|  | >90 days | 10 | 6 (60·0%, 29·11–85·77) |
| How many (estimated average) ≤1 month calves are kept per pen? | 1 | 19 | 16 (84·2%, 62·79–95·82) |
|  | 2-5 | 8 | 2 (25·0%, 4·43–61·17) |
|  | 6-10 | 7 | 5 (71·4%, 33·02–94·90) |
|  | >10 | 14 | 8 (57·1%, 31·15–80·44) |
| How many times (estimated average) are calves moved to new place (pen/hutch) before reaching 1 month of age (not including the first move when separating from the dam)? | 0 | 14 | 8 (57·1%, 31·15–80·44) |
|  | 1 | 20 | 12 (60·0%, 37·89–79·39) |
|  | >1 | 15 | 11 (73·3%, 47·47–90·90) |
| What type of floor there is in calf pens?ǂ 1,2,3 | Dirt | 0 | - |
|  | Concrete3,4\* | 33 | 19 (57·6%, 40·42–73·45) |
|  | Wood1,2,4 | 21 | 16 (76·2%, 54·85–90·72) |
|  | Plastic | 0 | - |
|  | Slatted3 | 3 | 2 (66·7%, 13·20–98·33) |
|  | Other | 5 | 3 (60·0%, 18·24–92·65) |
| What is type of bedding material used in the calf pens/hutches? ǂ 4 | Thin bedding4 | 11 | 6 (54·5%, 25·92–81·03) |
|  | Deep bedding4\* | 40 | 26 (65·0%, 49·39–78·51) |
|  | No bedding | 0 | - |
|  | Other | 0 | - |
| What is the longest time period between faecal matter removal from calf pens/hutches? | 1 day | 15 | 7 (46·7%, 23·20–71·32) |
|  | 2 days | 11 | 9 (81·8%, 51·73–96·83) |
|  | 3-14 days | 6 | 3 (50·0%, 14·66–85·34) |
|  | >14 days | 5 | 3 (60·0%, 18·24–92·65) |
| Is high pressure wash used for cleaning the calf hutches/pens? | No | 26 | 15 (57·7%, 38·39–75·37) |
|  | Yes | 23 | 16 (69·6%, 48·86–85·61) |
| Is there an empty period of more than one day between removing calves from the hutch/pen and having a new calf in the same hutch/pen?1,2,3\* | No | 4 | 4 (100·0%, 47·29–100·00) |
|  | Yes | 45 | 27 (60·0%, 45·27–73·48) |
| Do calves always receive colostrum within 1 hour after birth? | No | 16 | 10 (62·5%, 37·64–83·17) |
|  | Yes | 33 | 21 (63·6%, 46·38–78·59) |
| How is colostrum administered to calves? ǂ 1,2 | In a bucket1,2 | 12 | 5 (41·7%, 17·17–69·79) |
|  | With a drinking bottle | 40 | 28 (70·0%, 54·58–82·62) |
|  | By tube feeding | 4 | 1 (25·0%, 1·25–75·77) |
|  | Other | 0 | - |
| Where does the drinking water for calves originate?ǂ 3 | Well water | 43 | 26 (60·5%, 45·39–74·17) |
|  | Water pipeline (communal water source) | 5 | 4 (80·0%, 33·44–99·00) |
|  | Lake/pond water | 0 | - |
|  | A combination of previous options | 1 | 1 (100·0%, 5·00–100·00) |
|  | Other | 0 | - |
| Are calves fed with hay from pastures where other animals have been kept within 2 years before the harvest? | No | 42 | 25 (59·5%, 44·28–73·50) |
|  | Yes | 7 | 6 (85·7%, 46·95–99·29) |
| If yes, what kinds of animals were grazing on the pastures used also for hay within 2 years before the harvest? | Cattle | 7 | 6 (85·7%, 46·95–99·29) |
|  | Sheep | 0 | - |
|  | Horse | 0 | - |
|  | Other | 0 | - |
| Is the container of the feed for calves…?ǂ | … above the floor level | 44 | 28 (63·6%, 48·75–76·78) |
|  | … on the floor level | 8 | 5 (62·5%, 27·80–99·44) |
|  | Other | 0 | - |
| Where does the liquid run-off from collected cattle faeces end up? ǂ 3 | Directly to sewage system | 3 | 2 (66·7%, 13·20–98·33) |
|  | Stored and used as fertiliser | 42 | 25 (59·5%, 44·29–73·50) |
|  | Nowhere (absorbed by the ground) | 1 | 1 (100·0%, 5·00–100·00) |
|  | Other | 3 | 3 (100·0%, 36·84–100·00) |
| Are cattle faeces from the farm used to fertilise areas used for producing food for humans? | No | 26 | 15 (57·7%, 38·39–75·37) |
|  | Yes | 18 | 12 (66·7%, 43·10–85·23) |
|  | I do not know | 5 | 4 (80·0%, 33·44–99·00) |
| In which season is cattle manure spread on fields?1,2,3 | Winter | 0 | - |
|  | Spring1\*\*,2\*\* | 39 | 28 (71·8%, 56·27–84·18) |
|  | Summer | 14 | 10 (71·4%, 44·55–90·19) |
|  | Autumn3 | 46 | 29 (63·0%, 48·49–76·00) |
|  | No answer | 2 | - |
| How close is the nearest waterbody (lake, river, or stream) to the area where cattle manure is spread? | Waterbodies are on/part of the area | 3 | 2 (66·7%, 13·20–98·33) |
|  | Waterbodies are bordering the area | 5 | 3 (60·0%, 18·24–92·65) |
|  | Waterbodies are <100 metres from area | 3 | 3 (100·0%, 36·84–100·00) |
|  | Waterbodies >100 metres from area | 34 | 20 (58·8%, 41·89–74·31) |
| Do farm staff attending the calves have functional toilet facilities, with water, in the building where calves are raised? | No | 20 | 12 (60·0%, 37·89–79·39) |
|  | Yes | 29 | 19 (65·5%, 47·09–80·98) |
| If you answered ‘no’ to the previous question, please describe how far the toilet facilities are from the building where the calves are raised? | 1-10 metres | 18 | 11 (61·1%, 37·75–81·14) |
|  | >10 metres | 14 | 10 (71·4%, 44·55–90·19) |
| How frequently are the toilet facilities cleaned?1,2 | Daily | 26 | 19 (73·1%, 53·86–87·39) |
|  | Several times a week | 20 | 12 (60·0%, 37·89–79·39) |
|  | Weekly | 2 | 0 (0·0%, 0·00–77·64) |
| Are there soap and water always available to wash hands at the toilet facilities?1,2 | No | 13 | 6 (46·2%, 21·30–72·57) |
|  | Yes | 36 | 25 (69·4%, 53·10–82·76) |
| How large a proportion of calves have had diarrhoea during their first month of life on the farm? | None (0%) | 2 | 2 (100·0%, 22·36–100·00) |
|  | One in four (25%) | 21 | 10 (47·6%, 27·29–68·57) |
|  | Half (50%) | 12 | 8 (66·7%, 37·69–88·39) |
|  | Three in four (75%) | 11 | 9 (81·8%, 51·73–96·83) |
|  | All (100%) | 3 | 2 (66·7%, 13·20–98·33) |
| During the last year, how large a proportion of calves with severe diarrhoea died during their first month of life on the farm, among those that received veterinary treatment?1,2 | 0% | 14 | 6 (42·9%, 19·56–68·85) |
|  | 1-25% | 35 | 25 (71·4%, 54·95–84·48) |
|  | 26-50% | 0 | - |
|  | 51-75% | 1 | 0 (0·0%, 0·00–95·00) |
|  | 76-100% | 0 | - |
|  | Unknown | 0 | - |
| During the last year, how large a proportion of calves with severe diarrhoea died during their first month of life on the farm, among those without veterinary intervention?1 | 0% | 28 | 16 (57·1%, 38·56–74·32) |
|  | 1-25% | 12 | 8 (66·7%, 37·69–88·39) |
|  | 26-50% | 1 | 1 (100·0%, 5·00–100·00) |
|  | 51-75% | 1 | 1 (100·0%, 5·00–100·00) |
|  | 76-100% | 1 | 1 (100·0%, 5·00–100·00) |
|  | Unknown | 3 | 3 (100·0%, 36·84–100·00) |
| Have calves on the farm been diagnosed (laboratory-confirmed diagnosis) with any of the following pathogens within the last 5 years? | *Giardia*1,3\* | 2 | 2 (100·0%, 22·36–100·00) |
|  | *Cryptosporidium*1\*,2\*,3 | 10 | 9 (90·0%, 59·65–99·50) |
|  | *Eimeria*2,4 | 4 | 4 (100·0%, 47·29–100·00) |
|  | *Rotavirus*1,2 | 16 | 13 (81·3%, 56·99–95·00) |
|  | *Bovine viral diarrhoea virus* | 12 | 9 (75·0%, 45·88–93·21) |
|  | *E. coli2*,3 | 15 | 11 (73·3%, 47·47–90·90) |
|  | *Salmonella*3 | 3 | 3 (100·0%, 36·84–100·00) |
|  | *Coronavirus* | 8 | 6 (75·0%, 38·83–95·57) |
|  | None1\*,2\*,3\* | 24 | 11 (45·8%, 26·96–65·66) |
| Total |  | 49 | 31 (63·3%, 49·18–75·83) |

ǂ More than one option could be chosen

1 variable with P value <0·2 in univariable analysis for a faecal sample of a calf testing positive for *Cryptosporidium* spp.

2 variable with P value <0·2 in univariable analysis for a faecal sample of a calf testing positive for *Cryptosporidium parvum*.

3 variable with P value <0·2 in univariable analysis for a faecal sample of a calf testing positive for *C. parvum* subtype IIa18G1R1.

4 variable with P value <0·2 in univariable analysis for a faecal sample of a calf testing positive for *C. parvum* subtype IIaA16G1R1.

No answer to all questions from all farms.

Result of univariable analysis: \* P ≤ 0·05, \*\* P ≤ 0·01, \*\*\* P ≤ 0·001