**Table S1:** raw binary results of Real-Time PCR analysis (date provided in the format MM/DD/YYYY)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sample type | Area of collection | Date of collection | *eae* | *stx* | Serotype identified |
| Raw milk filter | Bergamo province | 2/23/2022 | -1 | +2 | /3 |
| Raw milk filter | Bergamo province | 2/23/2022 | - | - | / |
| Raw milk filter | Bergamo province | 2/23/2022 | + | + | O103 |
| Raw milk filter | Bergamo province | 2/23/2022 | - | - | / |
| Raw milk filter | Bergamo province | 2/23/2022 | - | + | / |
| Raw milk filter | Bergamo province | 3/9/2022 | - | - | / |
| Raw milk filter | Bergamo province | 3/9/2022 | - | - | / |
| Raw milk filter | Bergamo province | 3/9/2022 | - | - | / |
| Raw milk filter | Bergamo province | 3/9/2022 | - | - | / |
| Raw milk filter | Bergamo province | 3/9/2022 | - | - | / |
| Raw milk filter | Lodi province | 3/16/2022 | + | - | / |
| Raw milk filter | Lodi province | 3/16/2022 | + | - | / |
| Raw milk filter | Lodi province | 3/16/2022 | - | - | / |
| Raw milk filter | Lodi province | 3/16/2022 | + | - | / |
| Raw milk filter | Lodi province | 4/1/2022 | - | - | / |
| Raw milk filter | Lodi province | 4/1/2022 | + | + | / |
| Raw milk filter | Lodi province | 4/1/2022 | + | + | / |
| Raw milk filter | Lodi province | 4/1/2022 | - | - | / |
| Raw milk filter | Lodi province | 4/14/2022 | + | + | O26, O45/O121 |
| Raw milk filter | Lodi province | 4/14/2022 | + | - | / |
| Raw milk filter | Lodi province | 4/14/2022 | + | + | / |
| Raw milk filter | Lodi province | 4/14/2022 | + | - | / |
| Raw milk filter | Bergamo province | 3/30/2022 | - | - | / |
| Raw milk filter | Bergamo province | 3/30/2022 | - | - | / |
| Raw milk filter | Bergamo province | 3/30/2022 | + | + | O103, O45/O121 |
| Raw milk filter | Bergamo province | 3/30/2022 | - | - | / |
| Raw milk filter | Bergamo province | 3/30/2022 | + | - | / |
| Raw milk filter | Bergamo province | 4/13/2022 | + | - | / |
| Raw milk filter | Bergamo province | 4/13/2022 | - | - | / |
| Raw milk filter | Bergamo province | 4/13/2022 | + | + | O103 |
| Raw milk filter | Bergamo province | 4/13/2022 | + | + | O26 |
| Raw milk filter | Bergamo province | 4/13/2022 | - | - | / |
| Raw milk filter | Bergamo province | 4/13/2022 | - | - | / |
| Raw milk filter | Bergamo province | 4/27/2022 | + | - | / |
| Raw milk filter | Bergamo province | 4/27/2022 | - | - | / |
| Raw milk filter | Bergamo province | 4/27/2022 | - | - | / |
| Raw milk filter | Bergamo province | 4/27/2022 | + | + | O26 |
| Raw milk filter | Bergamo province | 4/27/2022 | - | - | / |
| Raw milk filter | Lodi province | 5/9/2022 | + | - | / |
| Raw milk filter | Lodi province | 5/9/2022 | + | + | O103, O145 |
| Raw milk filter | Lodi province | 5/9/2022 | + | + | O145 |
| Raw milk filter | Lodi province | 5/9/2022 | + | - | / |
| Raw milk filter | Lodi province | 5/17/2022 | + | - | / |
| Raw milk filter | Lodi province | 5/17/2022 | + | - | / |
| Raw milk filter | Lodi province | 5/17/2022 | + | - | / |
| Raw milk filter | Lodi province | 5/17/2022 | - | - | / |
| Raw milk filter | Bergamo province | 5/11/2022 | - | - | / |
| Raw milk filter | Bergamo province | 5/11/2022 | - | - | / |
| Raw milk filter | Bergamo province | 5/11/2022 | - | - | / |
| Raw milk filter | Bergamo province | 5/11/2022 | + | + | / |
| Raw milk filter | Bergamo province | 5/11/2022 | - | - | / |
| Raw milk filter | Lodi province | 5/25/2022 | + | - | / |
| Raw milk filter | Lodi province | 5/25/2022 | + | + | O26, O103, O145 |
| Raw milk filter | Lodi province | 5/25/2022 | + | + | O26 |
| Raw milk filter | Lodi province | 5/25/2022 | + | + | O26 |
| Raw milk filter | Bergamo province | 5/11/2022 | - | - | / |
| Raw milk filter | Lodi province | 5/31/2022 | + | + | O26 |
| Raw milk filter | Lodi province | 5/31/2022 | + | - | / |
| Raw milk filter | Lodi province | 5/31/2022 | + | + | / |
| Raw milk filter | Lodi province | 5/31/2022 | + | + | O26, O45/O121 |
| Raw milk filter | Lodi province | 6/28/2022 | + | - | / |
| Raw milk filter | Lodi province | 6/28/2022 | + | - | / |
| Raw milk filter | Lodi province | 6/28/2022 | + | + | O26 |
| Raw milk filter | Lodi province | 6/28/2022 | + | + | O26 |
| Raw milk filter | Bergamo province | 6/7/2022 | + | + | O26 |
| Raw milk filter | Bergamo province | 6/7/2022 | + | + | / |
| Raw milk filter | Bergamo province | 6/7/2022 | - | - | / |
| Raw milk filter | Bergamo province | 6/7/2022 | + | + | O103, O45/O121 |
| Raw milk filter | Bergamo province | 6/22/2022 | - | - | / |
| Raw milk filter | Bergamo province | 6/22/2022 | + | - | / |
| Raw milk filter | Bergamo province | 6/22/2022 | - | - | / |
| Raw milk filter | Bergamo province | 6/22/2022 | - | + | O103 |
| Raw milk filter | Bergamo province | 7/6/2022 | - | + | O26 |
| Raw milk filter | Bergamo province | 7/6/2022 | - | - | / |
| Raw milk filter | Bergamo province | 7/6/2022 | + | - | / |
| Raw milk filter | Bergamo province | 7/6/2022 | - | + | O103 |
| Raw milk filter | Lodi province | 7/26/2022 | + | + | O26, O45/O121 |
| Raw milk filter | Lodi province | 7/26/2022 | + | - | / |
| Raw milk filter | Lodi province | 7/26/2022 | + | + | O26 |
| Raw milk filter | Lodi province | 7/26/2022 | + | + | O26 |
| Raw milk filter | Lodi province | 9/21/2022 | + | + | / |
| Raw milk filter | Lodi province | 9/21/2022 | + | + | O111 |
| Raw milk filter | Lodi province | 9/21/2022 | - | - | / |
| Raw milk filter | Lodi province | 9/21/2022 | + | + | / |
| Raw milk filter | Bergamo province | 7/27/2022 | - | - | / |
| Raw milk filter | Bergamo province | 7/27/2022 | + | - | / |
| Raw milk filter | Bergamo province | 8/10/2022 | + | + | O103 |
| Raw milk filter | Bergamo province | 8/10/2022 | + | + | / |
| Raw milk filter | Bergamo province | 8/24/2022 | - | - | / |
| Raw milk filter | Bergamo province | 8/24/2022 | - | - | / |
| Raw milk filter | Bergamo province | 8/24/2022 | - | - | / |
| Raw milk filter | Lodi province | 10/26/2022 | + | + | O26, O111, O45/O121 |
| Raw milk filter | Lodi province | 10/26/2022 | + | + | O26, O103, O111 |
| Raw milk filter | Lodi province | 10/26/2022 | - | - | / |
| Raw milk filter | Lodi province | 10/26/2022 | + | - | / |
| Raw milk filter | Milan province | 4/4/2022 | - | + | / |
| Raw milk filter | Milan province | 4/4/2022 | + | + | O157 |
| Raw milk filter | Milan province | 5/5/2022 | + | - | / |
| Raw milk filter | Milan province | 5/27/2022 | - | - | / |
| Raw milk filter | Milan province | 5/27/2022 | + | + | O45/O121 |
| Raw milk filter | Milan province | 5/27/2022 | + | + | O103 |
| Raw milk filter | Milan province | 6/24/2022 | + | - | / |
| Raw milk filter | Milan province | 6/24/2022 | + | - | / |
| Raw milk filter | Milan province | 7/22/2022 | + | + | / |
| Raw milk | Bergamo province | 2/23/2022 | - | - | / |
| Raw milk | Bergamo province | 2/23/2022 | + | - | / |
| Raw milk | Bergamo province | 2/23/2022 | - | - | / |
| Raw milk | Bergamo province | 2/23/2022 | - | - | / |
| Raw milk | Bergamo province | 2/23/2022 | - | - | / |
| Raw milk | Bergamo province | 3/9/2022 | + | - | / |
| Raw milk | Bergamo province | 3/9/2022 | - | - | / |
| Raw milk | Bergamo province | 3/9/2022 | - | - | / |
| Raw milk | Bergamo province | 3/9/2022 | - | - | / |
| Raw milk | Bergamo province | 3/9/2022 | - | - | / |
| Raw milk | Lodi province | 3/16/2022 | - | - | / |
| Raw milk | Lodi province | 4/1/2022 | - | - | / |
| Raw milk | Lodi province | 4/14/2022 | - | - | / |
| Raw milk | Bergamo province | 3/30/2022 | - | - | / |
| Raw milk | Bergamo province | 3/30/2022 | + | - | / |
| Raw milk | Bergamo province | 3/30/2022 | - | - | / |
| Raw milk | Bergamo province | 3/30/2022 | - | - | / |
| Raw milk | Bergamo province | 3/30/2022 | - | - | / |
| Raw milk | Bergamo province | 3/30/2022 | - | - | / |
| Raw milk | Bergamo province | 4/13/2022 | - | - | / |
| Raw milk | Bergamo province | 4/13/2022 | - | - | / |
| Raw milk | Bergamo province | 4/13/2022 | - | - | / |
| Raw milk | Bergamo province | 4/13/2022 | - | - | / |
| Raw milk | Bergamo province | 4/13/2022 | - | - | / |
| Raw milk | Bergamo province | 4/13/2022 | - | - | / |
| Raw milk | Bergamo province | 4/13/2022 | - | - | / |
| Raw milk | Lodi province | 5/9/2022 | - | - | / |
| Raw milk | Lodi province | 5/17/2022 | - | - | / |
| Raw milk | Bergamo province | 4/27/2022 | - | - | / |
| Raw milk | Bergamo province | 4/27/2022 | + | - | / |
| Raw milk | Bergamo province | 4/27/2022 | - | - | / |
| Raw milk | Bergamo province | 4/27/2022 | - | - | / |
| Raw milk | Bergamo province | 4/27/2022 | - | - | / |
| Raw milk | Bergamo province | 4/27/2022 | - | - | / |
| Raw milk | Bergamo province | 5/11/2022 | - | - | / |
| Raw milk | Bergamo province | 5/11/2022 | - | - | / |
| Raw milk | Bergamo province | 5/11/2022 | - | - | / |
| Raw milk | Bergamo province | 5/11/2022 | - | - | / |
| Raw milk | Bergamo province | 5/11/2022 | - | - | / |
| Raw milk | Bergamo province | 5/11/2022 | - | + | / |
| Raw milk | Bergamo province | 5/11/2022 | - | - | / |
| Raw milk | Lodi province | 5/31/2022 | - | - | / |
| Raw milk | Lodi province | 6/28/2022 | - | - | / |
| Raw milk | Bergamo province | 6/7/2022 | - | - | / |
| Raw milk | Bergamo province | 6/7/2022 | - | - | / |
| Raw milk | Bergamo province | 6/7/2022 | - | + | / |
| Raw milk | Bergamo province | 6/7/2022 | - | - | / |
| Raw milk | Bergamo province | 6/7/2022 | - | - | / |
| Raw milk | Bergamo province | 6/7/2022 | - | - | / |
| Raw milk | Bergamo province | 6/22/2022 | - | - | / |
| Raw milk | Bergamo province | 6/22/2022 | - | - | / |
| Raw milk | Bergamo province | 6/22/2022 | + | - | / |
| Raw milk | Bergamo province | 6/22/2022 | - | - | / |
| Raw milk | Bergamo province | 6/22/2022 | - | - | / |
| Raw milk | Bergamo province | 6/22/2022 | - | - | / |
| Raw milk | Bergamo province | 7/6/2022 | - | - | / |
| Raw milk | Bergamo province | 7/6/2022 | - | - | / |
| Raw milk | Bergamo province | 7/6/2022 | - | - | / |
| Raw milk | Bergamo province | 7/6/2022 | - | - | / |
| Raw milk | Bergamo province | 7/6/2022 | - | - | / |
| Raw milk | Bergamo province | 7/6/2022 | - | - | / |
| Raw milk | Lodi province | 7/26/2022 | - | - | / |
| Raw milk | Lodi province | 9/21/2022 | - | - | / |
| Raw milk | Bergamo province | 7/27/2022 | - | - | / |
| Raw milk | Bergamo province | 7/27/2022 | - | - | / |
| Raw milk | Bergamo province | 7/27/2022 | - | - | / |
| Raw milk | Bergamo province | 8/10/2022 | - | - | / |
| Raw milk | Bergamo province | 8/10/2022 | - | - | / |
| Raw milk | Bergamo province | 8/10/2022 | - | - | / |
| Raw milk | Bergamo province | 8/24/2022 | - | - | / |
| Raw milk | Bergamo province | 8/24/2022 | - | - | / |
| Raw milk | Bergamo province | 8/24/2022 | - | - | / |
| Raw milk | Lodi province | 10/26/2022 | - | - | / |
| Raw milk | Milan province | 4/4/2022 | - | - | / |
| Raw milk | Milan province | 4/4/2022 | - | - | / |
| Raw milk | Milan province | 4/4/2022 | - | + | / |
| Raw milk | Milan province | 5/5/2022 | - | - | / |
| Raw milk | Milan province | 5/5/2022 | + | - | / |
| Raw milk | Milan province | 5/5/2022 | + | - | / |
| Raw milk | Milan province | 5/27/2022 | - | - | / |
| Raw milk | Milan province | 5/27/2022 | - | - | / |
| Raw milk | Milan province | 5/27/2022 | + | - | / |
| Raw milk | Milan province | 6/24/2022 | - | - | / |
| Raw milk | Milan province | 6/24/2022 | + | - | / |
| Raw milk | Milan province | 6/24/2022 | + | - | / |
| Raw milk | Milan province | 7/22/2022 | - | - | / |
| Raw milk | Milan province | 7/22/2022 | - | - | / |
| Raw milk | Milan province | 7/22/2022 | - | - | / |
| Bovine feces Post-weaning | Milan province | 4/4/2022 | + | + | / |
| Bovine feces Post-weaning | Milan province | 4/4/2022 | - | - | / |
| Bovine feces Post-weaning | Milan province | 4/4/2022 | - | - | / |
| Bovine feces Pre-weaning | Milan province | 4/4/2022 | + | + | / |
| Bovine feces Pre-weaning | Milan province | 4/4/2022 | + | + | O45/0121 |
| Bovine feces Pre-weaning | Milan province | 4/4/2022 | + | + | O45/O121, O103 |
| Bovine feces Pre-weaning | Milan province | 4/4/2022 | + | + | / |
| Bovine feces Pre-weaning | Milan province | 4/4/2022 | + | + | O103 |
| Bovine feces Pre-weaning | Milan province | 4/4/2022 | + | + | O103 |
| Bovine feces Pre-weaning | Milan province | 4/4/2022 | + | + | O26, O103 |
| Bovine feces Pre-weaning | Milan province | 4/4/2022 | + | + | O26 |
| Bovine feces Post-weaning | Milan province | 4/4/2022 | + | + | / |
| Bovine feces Post-weaning | Milan province | 4/4/2022 | + | + | / |
| Bovine feces Post-weaning | Milan province | 4/4/2022 | + | + | / |
| Bovine feces Post-weaning | Milan province | 4/4/2022 | + | + | / |
| Bovine feces Pre-weaning | Milan province | 4/4/2022 | - | - | / |
| Bovine feces Pre-weaning | Milan province | 4/4/2022 | + | - | / |
| Bovine feces Pre-weaning | Milan province | 4/4/2022 | + | + | / |
| Bovine feces Pre-weaning | Milan province | 4/4/2022 | + | + | / |
| Bovine feces Pre-weaning | Milan province | 4/4/2022 | + | + | / |
| Bovine feces Post-weaning | Milan province | 4/4/2022 | + | + | O103, O26, O45/O121 |
| Bovine feces Post-weaning | Milan province | 4/4/2022 | + | + | O26, O45/O121 |
| Bovine feces Post-weaning | Milan province | 4/4/2022 | + | + | O157, O26, O45/O121 |
| Bovine feces Pre-weaning | Milan province | 5/5/2022 | + | + | / |
| Bovine feces Pre-weaning | Milan province | 5/5/2022 | + | + | / |
| Bovine feces Pre-weaning | Milan province | 5/5/2022 | + | - | / |
| Bovine feces Pre-weaning | Milan province | 5/5/2022 | + | + | O45/0121 |
| Bovine feces Post-weaning | Milan province | 5/5/2022 | + | + | O45/0121 |
| Bovine feces Post-weaning | Milan province | 5/5/2022 | + | + | / |
| Bovine feces Pre-weaning | Milan province | 5/5/2022 | - | - | / |
| Bovine feces Pre-weaning | Milan province | 5/5/2022 | + | + | O26, O103, O45/O121 |
| Bovine feces Pre-weaning | Milan province | 5/5/2022 | + | + | O26 |
| Bovine feces Pre-weaning | Milan province | 5/5/2022 | + | + | O26 |
| Bovine feces Post-weaning | Milan province | 5/5/2022 | + | + | / |
| Bovine feces Post-weaning | Milan province | 5/5/2022 | + | + | O26, O103, O45/O121 |
| Bovine feces Post-weaning | Milan province | 5/5/2022 | + | + | O26, O103 |
| Bovine feces Pre-weaning | Milan province | 5/5/2022 | - | - | / |
| Bovine feces Pre-weaning | Milan province | 5/5/2022 | + | - | / |
| Bovine feces Pre-weaning | Milan province | 5/5/2022 | + | + | O26, O45/O121 |
| Bovine feces Post-weaning | Milan province | 5/5/2022 | + | + | O26 |
| Bovine feces Post-weaning | Milan province | 5/5/2022 | + | + | O157, O26, O45/O121 |
| Bovine feces Post-weaning | Milan province | 5/5/2022 | + | + | O26 |
| Bovine feces Pre-weaning | Milan province | 5/27/2022 | + | + | / |
| Bovine feces Pre-weaning | Milan province | 5/27/2022 | + | - | / |
| Bovine feces Pre-weaning | Milan province | 5/27/2022 | + | + | / |
| Bovine feces Pre-weaning | Milan province | 5/27/2022 | + | + | O26 |
| Bovine feces Pre-weaning | Milan province | 5/27/2022 | + | + | / |
| Bovine feces Pre-weaning | Milan province | 5/27/2022 | + | + | O26 |
| Bovine feces Pre-weaning | Milan province | 5/27/2022 | + | + | O26 |
| Bovine feces Pre-weaning | Milan province | 5/27/2022 | + | + | O145, O45/O121 |
| Bovine feces Post-weaning | Milan province | 5/27/2022 | + | + | O145, O45/O121 |
| Bovine feces Post-weaning | Milan province | 5/27/2022 | + | + | O145 |
| Bovine feces Post-weaning | Milan province | 5/27/2022 | + | + | O26, O103, O145, O45/O121 |
| Bovine feces Pre-weaning | Milan province | 5/27/2022 | + | - | / |
| Bovine feces Pre-weaning | Milan province | 5/27/2022 | + | - | / |
| Bovine feces Pre-weaning | Milan province | 5/27/2022 | + | - | / |
| Bovine feces Pre-weaning | Milan province | 5/27/2022 | - | - | / |
| Bovine feces Post-weaning | Milan province | 5/27/2022 | + | + | O103, O45/O121 |
| Bovine feces Post-weaning | Milan province | 5/27/2022 | + | + | O45/O121 |
| Bovine feces Post-weaning | Milan province | 5/27/2022 | + | + | O103, O45/O121 |
| Bovine feces Pre-weaning | Milan province | 6/24/2022 | + | + | O45/O121 |
| Bovine feces Pre-weaning | Milan province | 6/24/2022 | + | + | O103, O45/O121 |
| Bovine feces Pre-weaning | Milan province | 6/24/2022 | + | - | / |
| Bovine feces Pre-weaning | Milan province | 6/24/2022 | + | + | O45/O121 |
| Bovine feces Pre-weaning | Milan province | 6/24/2022 | + | + | O45/O121 |
| Bovine feces Post-weaning | Milan province | 6/24/2022 | + | + | O157, O45/O121 |
| Bovine feces Post-weaning | Milan province | 6/24/2022 | + | + | O157, O26, O45/O121 |
| Bovine feces Post-weaning | Milan province | 6/24/2022 | + | + | O157, O45/O121 |
| Bovine feces Pre-weaning | Milan province | 6/24/2022 | - | - | / |
| Bovine feces Pre-weaning | Milan province | 6/24/2022 | - | + | / |
| Bovine feces Pre-weaning | Milan province | 6/24/2022 | + | - | / |
| Bovine feces Pre-weaning | Milan province | 6/24/2022 | + | + | O26 |
| Bovine feces Post-weaning | Milan province | 6/24/2022 | + | + | O26 |
| Bovine feces Post-weaning | Milan province | 6/24/2022 | + | + | O26, O45/O121 |
| Bovine feces Pre-weaning | Milan province | 6/24/2022 | - | - | / |
| Bovine feces Pre-weaning | Milan province | 6/24/2022 | + | + | O157 |
| Bovine feces Pre-weaning | Milan province | 6/24/2022 | - | - | / |
| Bovine feces Post-weaning | Milan province | 6/24/2022 | + | + | O157 |
| Bovine feces Post-weaning | Milan province | 6/24/2022 | + | + | O157, O103, O45/O121 |
| Bovine feces Pre-weaning | Milan province | 7/22/2022 | - | - | / |
| Bovine feces Pre-weaning | Milan province | 7/22/2022 | + | + | O45/O121 |
| Bovine feces Pre-weaning | Milan province | 7/22/2022 | + | + | / |
| Bovine feces Pre-weaning | Milan province | 7/22/2022 | + | + | O157, O26, O45/O121 |
| Bovine feces Post-weaning | Milan province | 7/22/2022 | + | + | O26, O45/O121 |
| Bovine feces Post-weaning | Milan province | 7/22/2022 | - | - | / |
| Bovine feces Post-weaning | Milan province | 7/22/2022 | + | + | O26, O45/O121 |
| Bovine feces Pre-weaning | Milan province | 7/22/2022 | + | - | / |
| Bovine feces Pre-weaning | Milan province | 7/22/2022 | + | - | / |
| Bovine feces Pre-weaning | Milan province | 7/22/2022 | - | - | / |
| Bovine feces Pre-weaning | Milan province | 7/22/2022 | + | - | / |
| Bovine feces Post-weaning | Milan province | 7/22/2022 | + | + | O26 |
| Bovine feces Post-weaning | Milan province | 7/22/2022 | + | + | O26, O45/O121 |
| Bovine feces Pre-weaning | Milan province | 7/22/2022 | + | + | O26, O111 |
| Bovine feces Pre-weaning | Milan province | 7/22/2022 | - | - | / |
| Bovine feces Pre-weaning | Milan province | 7/22/2022 | + | + | O45/O121 |
| Bovine feces Pre-weaning | Milan province | 7/22/2022 | + | - | / |
| Bovine feces Post-weaning | Milan province | 7/22/2022 | + | + | O26 |
| Bovine feces Post-weaning | Milan province | 7/22/2022 | + | + | O103, O45/O121 |

1 Negative result for the Real-Time PCR detection of the target gene

2 Positive result for the Real-Time PCR detection of the target gene

3 No serotype identification