**Virologica Sinica**

**Supplementary Data**

**A serologic investigation of epizootic hemorrhagic disease virus in China between 2014 and 2019**

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**Supplementary data**

**Supplementary Table S1** Seroprevalence of EHDV in all tested bovines, goats/sheep, and deer from 15 provinces in China between 2014 and 2019.

| **Province** | **Animal** | **Seropositive rate (positive samples/total samples)** |
| --- | --- | --- |
|  |  | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **Total** |
| Chongqing | Bovine | NA | NA | 0.0% (0/20) | 13.6% (19/140) | 39.2% (98/250) | 37.8% (51/135) | 30.8% (168/545) |
|  | Goats/sheep | NA | NA | NA | NA | 4.3% (15/350) | NA | 4.3% (15/350) |
| Guangdong | Bovine | 41.2% (91/221) | 62.9% (188/299) | 62.7% (106/169) | 83.3% (155/186) | 58.2% (64/110) | NA | 61.3% (604/985) |
|  | Goats/sheep | 0.0% (0/12) | NA | NA | 0.0% (0/9) | NA | NA | 0.0% (0/21) |
| Guangxi | Bovine | 53.5% (83/155) | 46.2% (49/106) | NA | NA | 58.6% (85/145) | 88.8% (135/152) | 63.1% (352/558) |
|  | Goats/sheep | 1.3% (1/75) | 13.4% (19/142) | NA | NA | NA | 9.7% (17/176) | 9.4% (37/393) |
| Guizhou | Bovine | NA | NA | NA | 61.7% (71/115) | 67.4% (64/95) | 34.5% (38/110) | 54.1% (173/320) |
|  | Goats/sheep | NA | NA | NA | NA | NA | 1.9% (5/267) | 1.9% (5/267) |
| Hebei | Bovine | NA | NA | NA | 4.7% (7/150) | 1.1% (1/95) | 1.0% (1/100) | 26.1% (9/345) |
|  | Goats/sheep | NA | NA | NA | NA | 0.0% (0/182) | 0.4% (1/250) | 0.2% (1/432) |
| Hubei | Bovine | NA | NA | 0.0% (0/31) | 0.0% (0/12) | 78.7% (144/183) | 46.8% (103/220) | 55.4% (247/446) |
|  | Goats/sheep | NA | NA | 1.1% (2/190) | 0.7% (1/140) | NA | 8.2% (23/282) | 4.2% (26/612) |
| Inner Mongolia | Bovine | 0.0% (0/32) | 0.0% (0/30) | NA | NA | 1.1% (1/90) | 6.7% (8/120) | 3.3% (9/272) |
|  | Goats/sheep | 0.0% (0/234) | 1.0% (1/100) | 0.4% (2/460) | 0.0% (0/450) | 0.9% (4/450) | 5.5% (11/200) | 1.0% (18/1,894) |
|  | Deer | NA | 10.0% (1/10) | NA | NA | NA | NA | 10.0% (1/10) |
| Jiangsu | Bovine | NA | 38.0% (19/50) | NA | NA | NA | NA | 38.0% (19/50) |
|  | Goats/sheep | NA | 0.0% (0/10) | NA | NA | NA | NA | 0.0% (0/10) |
| Jilin | Bovine | NA | NA | NA | 3.0% (3/100) | 0.0% (0/160) | 0.0% (0/120) | 0.8% (3/380) |
|  | Goats/sheep | NA | NA | NA | NA | NA | 0.0% (0/388) | 0.0% (0/388) |
| Liaoning | Bovine | NA | NA | NA | 2.7% (6/220) | NA | NA | 2.7% (6/220) |
|  | Goats/sheep | NA | NA | NA | 0.0% (0/115) | NA | NA | 0.0% (0/115) |
| Shanxi | Bovine | NA | 0.3% (1/292) | 1.2% (4/333) | 9.7% (30/309) | NA | NA | 3.7% (35/934) |
|  | Goats/sheep | NA | NA | 0.0% (0/40) | 2.6% (6/228) | NA | NA | 2.2% (6/268) |
| Sichuan | Bovine | NA | NA | NA | 68.0% (51/75) | NA | NA | 68.0% (51/75) |
|  | Goats/sheep | NA | NA | NA | 2.6% (4/156) | NA | NA | 2.6% (4/156) |
| Tibet | Bovine | NA | NA | NA | 0.0% (0/107) | 0.0% (0/240) | NA | 0.0% (0/347) |
|  | Goats/sheep | NA | NA | NA | NA | NA | NA | NA |
| Xinjiang | Bovine | NA | 2.1% (8/390) | 0.0% (0/697) | 0.0% (0/105) | 1.7% (3/178) | 4.6% (9/196) | 1.3% (20/1,566) |
|  | Goats/sheep | NA | 0.0% (0/10) | 2.1% (6/285) | 0.0% (0/16) | 5.0% (1/20) | 1.7% (10/576) | 1.9% (17/907) |
| Yunnan | Bovine | 37.5% (150/400) | NA | 2.5% (3/119)\* | 90.2% (2,489/2,759) | 55.4% (314/567) | 82.8% (622/751) | 77.9% (3,578/4,596) |
|  | Goats/sheep | 0.0% (0/150) | NA | 11.4% (4/35) | 8.0% (2/25) | 6.0% (18/300) | 19.3% (29/150) | 8.0% (53/660) |
| Total | Bovine | 40.1% (324/808) | 22.7% (265/1,167) | 8.3% (113/1,369) | 66.2% (2831/4,278) | 36.6% (774/2,113) | 50.8% (967/1,904) | 45.3% (5,274/11,639) |
|  | Goats/sheep | 0.2% (1/471) | 7.6% (20/262) | 1.4% (14/1,010) | 1.1% (13/1,139) | 2.9% (38/1,302) | 4.2% (96/2,289) | 2.8% (182/6,473) |

\* These animals include 98 yaks in Shangri-la.

*NA*, not available.

**Supplementary Table S2** Seropositive rates of the tested groups from 15 provinces in China between 2014 and 2019

| **Province** | **Animal** | **Seropositive rate (%) of tested groups, median (95% CI)** | **Total** |
| --- | --- | --- | --- |
|  |  | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** |  |
| Chongqing | Bovine | NA | NA | 0.0, n = 1 | 7.2 (0.0–14.3),n = 2 | 33.5 (24.0–43.0),n = 2 | 26.7 (15.0–51.4),n = 3 | 21.5 (0.0–39.1),n = 8 |
|  | Goats/sheep | NA | NA | NA | NA | 2.5 (0.0–10.0), n = 4 | NA | 2.5 (0.0–10.0),n = 4 |
| Guangdong | Bovine | 44.1 (10.0–71.7), n = 12 | 59.0 (47.5–74.6), n = 12 | 62.5 (55.6–83.3), n = 7 | 80.0 (73.3–100.0), n = 7 | 56.0 (41.6–79.2), n = 6 | NA | 62.9 (51.7–73.8),n = 44 |
|  | Sheep | 0.0, n = 1 | NA | NA | 0.0 (0.0–0.0), n = 2 | NA | NA | 0.0 (0.0–0.0),n = 3 |
| Guangxi | Bovine | 49 (39.1–79.4), n = 4 | 50.0 (38.9–56.3), n = 3 | NA | NA | 53.3 (33.3–76.0), n = 7 | 92.5 (80.0–100.0), n = 9 | 75.0 (50.0–86.7),n = 23 |
|  | Sheep | 0.0 (0.0–11.1), n = 4 | 11.7 (0.0–50.0), n = 4 | NA | NA | NA | 10.0 (0.0–18.8), n = 8 | 7.8 (0.0–14.3),n = 16 |
| Guizhou | Bovine | NA | NA | NA | 66.7 (33.3–75.0), n = 5 | 70.0 (53.3–80.0), n = 7 | 30.0 (0.0–40.0), n = 11 | 40.0 (30.0–70.0),n = 23 |
|  | Sheep | NA | NA | NA | NA | NA | 0.0 (0.0–0.0), n = 22 | 0.0 (0.0–0.0),n = 22 |
| Hebei | Bovine | NA | NA | NA | 4.5 (4.0–5.0), n = 2 | 0.0 (0.0–4.0),n = 3 | 1.0 (0.0–2.0),n = 2 | 2.0 (0.0–4.0),n = 7 |
|  | Sheep | NA | NA | NA | NA | 0.0 (0.0–0.0), n = 10 | 0.0 (0.0–0.0),n = 9 | 0.0 (0.0–0.0),n = 19 |
| Hubei | Bovine | NA | NA | 0.0 (0.0–0.0), n = 2 | 0.0, n = 1 | 73.5 (70.0–100.0), n = 3 | 47.5 (0.0–76.7), n = 4 | 47.5 (0.0–73.5),n = 10 |
|  | Sheep | NA | NA | 0.0 (0.0–1.9),n = 3 | 0.0 (0.0–2.0),n = 3 | NA | 5.9 (0.0–13.3),n = 4 | 0.0 (0.0–6.8),n = 10 |
| Inner Mongolia | Bovine | 0.0 (0.0–0.0), n = 3 | 0.0 (0.0–0.0), n = 3 | NA | NA | 0.0 (0.0–0.0), n = 9 | 0.0 (0.0–10.0),n = 10 | 0.0 (0.0–0.0),n = 25 |
|  | Sheep | 0.0 (0.0–0.0),n = 7 | 0.0 (0.0–0.0), n = 8 | 0.0 (0.0–0.0), n = 19 | 0.0 (0.0–0.0), n = 18 | 0.9, n = 1 | 0.0 (0.0–10.0), n = 20 | 0.0 (0.0–0.0),n = 73 |
| Jiangsu | Bovine | NA | 38.0, n = 1 | NA | NA | NA | NA | 38.0, n = 1 |
|  | Sheep | NA | 0.0, n = 1 | NA | NA | NA | NA | 0.0, n = 1 |
| Jilin | Bovine | NA | NA | NA | 3.0 (0.0–6.0),n = 2 | 0.0 (0.0–0.0),n = 2 | 0.0 (0.0–0.0),n = 3 | 0.0 (0.0–0.0),n = 7 |
|  | Sheep | NA | NA | NA | NA | NA | 0.0 (0.0–0.0), n = 23 | 0.0 (0.0–0.0),n = 23 |
| Liaoning | Bovine | NA | NA | NA | 2.4 (2.0–3.5),n = 3 | NA | NA | 2.4 (2.0–3.5),n = 3 |
|  | Sheep | NA | NA | NA | 0.0 (0.0–0.0),n = 5 | NA | NA | 0.0 (0.0–0.0),n = 5 |
| Shanxi | Bovine | NA | 0.0 (0.0–0.0),n = 10 | 0.0 (0.0–3.3),n = 5 | 0.0 (0.0–18.2),n = 11 | NA | NA | 0.0 (0.0–0.0),n = 26 |
|  | Sheep | NA | NA | 0.0, n = 1 | 0.0 (0.0–6.3),n = 8 | NA | NA | 0.0 (0.0–6.3),n = 9 |
| Sichuan | Bovine | NA | NA | NA | 46.7 (20.0–100.0), n = 5 | NA | NA | 46.7 (20.0–100.0),n = 5 |
|  | Sheep | NA | NA | NA | 0.0 (0.0–2.8),n = 9 | NA | NA | 0.0 (0.0–2.8),n = 9 |
| Tibet | Bovine | NA | NA | NA | 0.0 (0.0–0.0),n = 2 | 0.0 (0.0–0.0), n = 24 | NA | 0.0 (0.0–0.0),n = 26 |
|  | Sheep | NA | NA | NA | NA | NA | NA | NA |
| Xinjiang | Bovine | NA | 0.0 (0.0–2.0),n = 9 | 0.0 (0.0–0.0),n = 16 | 0.0 (0.0–0.0),n = 5 | 0.0 (0.0–0.0), n = 11 | 0.0 (0.0–4.4), n = 10 | 0.0 (0.0–0.0),n = 51 |
|  | Sheep | NA | 0.0, n = 1 | 0.0 (0.0–5.0), n = 12 | 0.0, n = 1 | 5.0, n = 1 | 0.0 (0.0–0.0),n = 20 | 0.0 (0.0–0.0),n = 35 |
| Yunnan | Bovine | 37.5, n = 1 | NA | 7.2 (0.0–14.3), n = 2 | 91.5 (74.3–97.6),n = 9 | 58.4 (48.6–70.1),n = 4 | 95.7 (77.1–97.9),n = 13 | 90.9 (71.0–95.7),n = 29 |
|  | Sheep | 0.0, n = 1 | NA | 11.4, n = 1 | 8.0, n = 1 | 0.0 (0.0–36.0), n = 4 | 29.1 (8.2–50.0), n = 2 | 8.0 (0.0–36.0),n = 9 |
| Total | Bovine | 38.6 (10.0–57.0),n = 20 | 1.6 (0.0–38.0),n = 38 | 0.0 (0.0–0.0),n = 33 | 26.7 (3.8–68.1),n = 54 | 0.0 (0.0–6.9),n = 78 | 26.7 (2.0–60.0),n = 65 | 4.0 (0.0–21.1),n = 288 |
|  | Sheep | 0.0 (0.0–0.0),n = 13 | 0.0 (0.0–3.4),n = 14 | 0.0 (0.0–0.0),n = 36 | 0.0 (0.0–0.0),n = 47 | 0.0 (0.0–0.0),n = 20 | 0.0 (0.0–0.0),n = 108 | 0.0 (0.0–0.0),n = 238 |

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**Supplementary Fig. S1** Fitting curve analysis of the distribution of seropositive groups in China between 2014 and 2019. The distributions of seropositive groups along the longitude (**A**) and latitude (**B**) were shown, respectively. The smooth fitting curves were constructed under LOESS model for the bovine groups (blue) and goat/sheep groups (orange), respectively.