

INTISARI

Wabah Penyakit Mulut dan Kuku (PMK) di Indonesia sangat berdampak pada performa produksi dan reproduksi sapi perah. Penanganan yang cepat dan tepat pasca terinfeksi PMK diharapkan dapat membantu pemulihan produksi dan reproduksi sapi perah. Tujuan dari penelitian ini adalah untuk melakukan peneguhan diagnosa PMK, mengetahui dampak umum PMK, dampak PMK terhadap gangguan reproduksi, penanganan sapi perah terdampak PMK, dan melakukan kajian tingkat kesembuhan klinis dan reproduksi. Penelitian ini dilakukan dalam 4 tahap pelaksanaan. Tahap pertama melakukan identifikasi dan pengumpulan data terkait gejala klinis, dampak PMK, dan data gangguan reproduksi. Data diperoleh dari wawancara dengan peternak, observasi lapangan serta pemeriksaan perrektal dan ultrasonografi (USG) organ dan saluran reproduksi sapi dengan umur 2 – 10 tahun. Tahap kedua, peneguhan diagnosa PMK dengan melakukan uji laboratorium secara molekuler (*real time polymerase chain reaction* / RT-qPCR) dan serologis (ELISA). Sebanyak 40 sampel swab oropharing diambil dari sapi perah yang mengalami gangguan reproduksi pasca infeksi PMK untuk dilakukan pengujian RT-qPCR. Pengujian ELISA non struktural protein dan struktural protein dilakukan pada 40 serum sapi yang sama. Tahap ketiga, melakukan tindakan penanganan dan pengobatan pada sapi yang masih menunjukkan gejala klinis PMK dan mengalami gangguan reproduksi sapi pasca PMK. Pengamatan birahi pada sapi yang telah diobati dilakukan secara visual dan dilanjutkan dengan inseminasi buatan. Tahap keempat melakukan analisa hasil kesembuhan dari penanganan dan pengobatan yang dilakukan. Data kesembuhan penanganan gangguan reproduksi berupa informasi waktu kejadian estrus dan waktu inseminasi buatan. Data hasil kebuntingan pasca penanganan diperoleh dengan menghitung *service perconception* dan *conception rate*. Pemeriksaan kebuntingan dilakukan dengan ultrasonografi (USG) atau palpasi perrektal. Hasil penelitian menunjukkan RNA virus PMK terdeteksi pada 1 bulan dan 6 bulan pasca infeksi masing masing 39/40 (97,5%) dan 3/40 (7,5%). Hasil pengujian ELISA NSP pada 1 bulan dan 6 bulan pasca infeksi adalah 37/40 (92,5%) dan 35/40 (87,5%), serta hasil ELISA SP 36/40 (90%) dan 40/40 (100%). Hasil penelitian menunjukkan gangguan reproduksi sapi perah terdampak PMK sebesar 61,9% (96/155) meliputi *hipofungsi ovaria* (53,5%), *silent heat* (4,5%), kawin berulang (1,9%), *atrophy ovarian* (1,3%), dan *endometritis* (0,6%). Tingkat kesembuhan hasil penanganan dan pengobatan adalah 98% sapi menunjukkan birahi normal dan memenuhi standar untuk dilakukan inseminasi buatan (IB). Hasil performa reproduksi dalam penelitian ini adalah *service preconception* 2,2 (179/82), *conception rate* 51% (49/96), *pregnancy rate* 85% (82/96). Kesimpulan dari penelitian ini, berdasarkan uji laboratorium sapi sapi tersebut adalah terinfeksi PMK serotipe O. Penanganan gangguan reproduksi sapi perah terdampak PMK dapat meningkatkan performa reproduksi pasca PMK.

Kata kunci: Penyakit mulut dan kuku, sapi perah, gangguan reproduksi, RT-qPCR, ELISA, *service perconception*, *conception rate*

ABSTRACT

The Foot and Mouth Disease (FMD) outbreak in Indonesia has had a major impact on the production and reproductive performance of dairy cattle. Fast and appropriate treatment after being infected with FMD is expected to help restore production and reproduction of dairy cows. The aim of this research is to confirm the diagnosis of FMD, determine the general impact of FMD, the impact on reproductive disorders due to FMD, treat dairy cows affected by FMD, and conduct a study of clinical and reproductive recovery rates. This research was carried out in 4 stages. The first stage is identifying and collecting data related to clinical symptoms and the impact of FMD, as well as collecting data on reproductive disorders. This data was obtained by conducting interviews with farmers, field observations and rectal and ultrasonography (USG) examination of the reproductive organs and reproduction tract of cows aged 2 – 10 years. The second stage is molecular detection of FMD by real time polymerase chain reaction (RT-PCR) and serological (ELISA) laboratory tests. A total of 40 oropharyngeal swab samples were taken from dairy cows with reproductive disorders FMD infected cattle for RT-qPCR test. Forty sera were collected for *non-structural protein* (NSP) and *structural protein* (SP) identification using ELISA. The third stage is treatment for cows that show clinical symptoms of FMD and reproductive disorders FMD infected cattle. Estrus detection is carried out visually for artificial insemination. The fourth stage is analyzing the recovery results from the treatment conducted. The recovery rate is obtained through interviews with breeders, field observations and reproductive examinations. Post-treatment pregnancy outcome data was obtained by calculating *service per conception* and *conception rate*. Pregnancy examination is conducted by ultrasonography (USG) or per rectal palpation. All parameters of the research results were analyzed using descriptive analytics. The results showed that FMD virus RNA was detected at 1 month 39/40 (97,5%) and 6 months 3/40 (7.5%) after infection. The ELISA NSP results at 1 month and 6 months post-infection were 37/40 (92,5%) and 35/40 (87,5%), and the ELISA SP results were 36/40 (90%) and 40/40 (100%). The results of the study showed that 61,9% (96/155) of the reproductive disorders of dairy cows affected by FMD included *ovarian hypofunction* (HO) (53,5%), *silent heat* (SH) (4,5%), *repeat breeders* (RB) (1,9%), *ovarian atrophy* (AO) (1,3%), and *endometritis* (EDR) (0,6%). The recovery rate resulting from treatment is 98% of cows showing normal estrus and meeting the standards for artificial insemination (AI). The reproductive performances were service per conception 2,2 (179/82), conception rate 51% (49/96), and pregnancy rate 85% (82/96). The conclusion of this research, based on laboratory tests, is that the cows are infected with FMD serotype O. Proper treatment of the reproductive disorders of dairy cows affected by FMD can improve reproductive performance after FMD infection.

Keywords: Foot and mouth disease, impact of FMD, dairy cows, reproductive disorders, RT-PCR, ELISA, *service per conception*, *conception rate*