

FOOT AND MOUTH DISEASE (FMD)

NATNA THLENTU

He natna hi Foot and Mouth Disease Virus (FMDV) in a thlen a. He virus hi *Picornaviridae* family hnuaia *Aphovirus* genus hnuaia mi a ni. Serotype chi sarih: A, O, C, SAT1, SAT2, SAT3 leh Asia1 te an awm a. Mutation vangin FMDV chi (variant) hrang hrang te an lo insiam thei a ni.

Physical leh Chemical action FMDV in a tawrhtheih dan

Temperature: Dah vawh emaw dah khal emaw in he virus hi a vawnhim theih. 50°C chunglamah chuan zawi zawiin a thi thin. Sa ei tur te a tlem berah 70°C a minute 30 tal chhuan in virus te an thi thei.

pH: pH<6.0 emaw >9.0 ah rang takin an thi.

Disinfectants: Sodium hydroxide (2%), sodium carbonate (4%), citric acid (0.2%), acetic acid (2%), sodium hypochlorite (3%), potassium peroxydisulfate/sodium chloride (1%), leh chlorine dioxide te hian an tihlum thei a. Iodophores, quaternary ammonium compounds, leh phenol te hi an haw lo thung

Survival: Thal be leh thling ah te pH laihawl ah an dam thei a, mahse ruang khawng hnu ah tihrawl ah (pH<6.0) chuan an dam thei lo. Thal be leh thling dah khal (frozen) ah an dam khawchhuak thei. Bawnghnute tih thianghlimna naran (regular pasteurization) ah an damkhawchhuak thei a, mahse temperature sang tak hmanga bawnghnute tih thianghlimnaah erawh an thi thin. Hmun rovah an dawmkhawchhuak thei a, hmun hnawng leh vawtah phei chuan rei tak an dam thei. Hnim hnah leh ram leilungah thla 1 chung lai pawh an dam thei thin.

EPIDEMIOLOGY

- Ran natna inkaichhawn awlsam ber leh ranvulhtute tana hlohna nasa tak thlen thei a ni.
- Ran naupang ten ran puitling te aiin an thihpui nasa zawk.
- Bawngin an vei deuh ber a, mahse FMDV strain thenkhat ten vawkah leh kel leh beram ah natna an thlen ve thei.
- Africa rama African buffalo (*Syncerus caffer*) tiam lohvin ramsa te zingah he natna hrik pai thei an awm hriat a ni lo.
- Tun hmain sazuk in he natna hi inhnaihchilh avangin ranvulh te atangin an kai tih hriat a ni.

Natna tuartute (Hosts)

- Ran ke tin kak chi – bawng, vawk, kel, beram leh Lawi ten an vei thei.
- Ramsa ke tin kak chi – sazuk, sathar, sanghal, sai, giraffe, leh sanghawngsei ten an vei thei.
- African buffalo te chauh hi ramsa te zingah chuan hri lenna kawnga tangkaina nei awmchun a ni.

- Bawnga natna thlen tu FMDV strain thenkhat te hi sanghal leh sazuk atang te pawh a hmuh tawh a ni.

Inkaichhawn theih dan

- Ran damlovin ran dangah inhnaihchilhna atangin a kai thei.
- Hmanraw thianglim lo (kutkawr, pheikhaw, thawmhnaw, motor, etc) atangin natna a kaidarh theih.
- Vawkin chawnawi thianglim lo an ei atangin an kai thei.
- Bawngnotein a pui bawngnute thianglim lo a dawn atangin natna a kai thei.
- Bawngpa chi thianglim lo atangin bawngpuiin natna a kai thei.
- Boruak thianglim lo hip luh atangin a kai theih a, natna hrik te hi sik leh sa nawmna hmunah chuan kilometer 60 chuang a hla a leng vel thei.
- Mihring te hian kan thawkna dawt ah ni hnih khat chung kan lo pai ve thei a, chuvangin FMD kaihnhawih thila hnathawk mi te tan chuan natna tihdairh loh nan ni 3-5 chung inkhunghan a, taksa leh thawmhnaw te fai taka suk tur a ni.

Natnahrik awmna/kaichhawn theihna (source) te

Ran damlo te thaw, chil, zun leh ek, hnute leh a pa chi atangin a natna lanchhuah hma ni 4 thlengin a awm thei.

- Sa leh sa atanga thil siam pH 6.0 aia sanga vawn hovah a awm thei bawk.
- Ran damchhuak tawh leh vaccine pek tawh te hrawkah hian FMDV te an awm thei a, midang henah an kaichhawng thei thin.
- Bawng rual zingah 15-50% te hi natna pudarhtu an ni thei a, mahse thla 6 aia rei an pudarh meuh lova, chung zinga ran tlemte zingah kum 3 lai lo pudarh thei an awm.
- Lawi, kel leh beram ten FMDV hi thla reilote bak an pudarh thei lova; mahse African buffalo hi SAT serotype tidarhtu bulpui ber an ni a, kum 5 chung lai an vawngnung (harbour) thei.

A natna thlenna (Occurrence)

FMD hi Asia ram thenkhat, Africa, Middle East leh South America ah a leng thin.

DIAGNOSIS

Natna hri kai atanga ni 2-14 hnuah natna a langchhuak thin.

Clinical diagnosis

Natna thawh chak dan hi heng – virus strain, natna hrik kai tam lam, ran upat dan, ran breed, a tuartu ran (species) leh natna tuartu ranin natna a do chak theih danah te a innghat. Nasa lem lo tak atanga nasa tak thlengin an tuar thei. Farm khatah/ran rual tla ho zingah zaa za (100%) in an kai thuai thei a,

mahse thihpui erawh 1-5% vel niin ran note lamin 20% emaw a aia sangin an thihpui thin. Natna nasa vak lovah chuan kar 2 velah an dampui thin.

Bawng a a lanchhuah dan

- Khawsik, chaw ei tui lo, khur, ni 2-3 chungin an hnute tui a tlahniam a, chumi hnuah an ka chung durh avangin hmui an pet/tep chuap chuap a, ha an thial a, chilhli a tla duah duah a, ke tin kar vel durh avangin ke an bai a, per vak vakin anmahni ke an tlawh bawk thin. Heng durh te hi darkar 24 hnuah a keh a, a pilh thin. An hnute bu velah pawh a awm bawk thin.
- A tlangpuiin ni 8-15 hnuah an damchhuak a.
- Heng ka leh ke pilh velah natna dangin a tlakbuak a, an ke ting te a ti piangsual a, hnute vung leh hnute tui tlahniamin, an rihna an hlohva, lung tha lo leh no chhiat pawh a thlen thei a, an hur theih loh phah thin.
- Lung tha lo avangin a note in an thih phah thin.

Kel leh beram ah

- Khawsik. Nasa lutuk lovin ke bai leh ka chung na an nei thei.
- An ke na leh ka na a nasat loh avangin hriatpui lohvin an awm fo.
- An hnute a lo kang a. Natna langchhuak lem lovin an note te an thi mai thin.

Vawk ah

- Khawsik.
- An ke durh a nasa thei em em a, an ke an bai a, concrete a vulh ho phe chu an ke tin a tla fo.
- An khup a durh fo.
- An hmui leh hnar te alo durh a, an lei a lo khawro a. Vawk note te in an thihpui fo.

Lesions

- Lei, hahni, biang chung, dang chung lam, hmui leh hnar, ke tin kar, hnute bu leh hmur ah te durh a awm thin.
- Ran thi post mortem in an pumpui a pilh a, a note thi ah an lung chu rawng eng deuhin a in rin ruak ("tiger heart") thin.

Natna dang FMD nena ngaihpawlh theih te

A lanchhuah dana hriathran theih loh natna te:

- Vesicular stomatitis
- Swine vesicular disease
- Vesicular exanthema of swine

Natna dang te:

- Rinderpest
- Bovine viral diarrhoea and Mucosal disease
- Infectious bovine rhinotracheitis
- Bluetongue
- Epizootic haemorrhagic disease
- Bovine mammillitis
- Bovine papular stomatitis; Contagious ecthyma
- Malignant catarrhal fever

Laboratory diagnosis

Samples

- An ka durh keh khawk 1g lak tur a ni a. Transport medium pH 7.2-7.6 (50% Buffered glycerine) ah fridge a dahvawh tur a ni. Chawk kawng leh dang chhung atanga tui lak chu fridge ah dahkhal nghal tur a ni.

Procedures

- Antigen ELISA
- Complement fixation test
- Virus isolation
- RT-PCR
- Electron microscopic examination
- Pen-side test

PREVENTION AND CONTROL

Sanitary prophylaxis

- Ran lut leh chhuak khuahkhirh leh surveillance hmanga hri la len lohna vawnhim.
- Ran lak luh leh dam lo te dahhran.
- FMD vei nia hriat leh a vei ngei te leh damchhuak tawh te suat.
- Ran in leh a vel leh bungrua damdawi hmanga tih thianghlim thin tur.
- Hri lenna hmuna ran thi, an mutna bungrua leh sa leh bawngnhute atanga siamchhuah thianghlim lo reng reng uluk taka tih ral.

Medical prophylaxis

Inactivated vaccines

- Standard Potency Vaccines (commercial vaccines)
- Higher Potency Vaccines (emergency vaccines)

India ramah FMD control programme kalpui mek a ni a, inactivated vaccine (Raksha Trivalent leh Raksha Ovac) hman a ni. Bawng vaccine vawikhat pekna turah chuan kar 3 atang kar 4 ah chiu a, thla 1 hnuah booster dose chiu leh a, a bak zawng chu thla 6 danah he vaccine hi pek thin tur a ni.

Live attenuated vaccines

Live vaccine hi chu ran tan a him tawh loh avang leh ran hri vei te hmuhchhuah kawngah harsatna a thlen theih avangin hman a ni ngai lo.

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