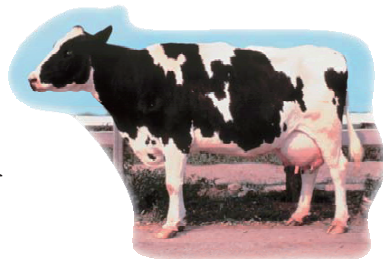




機器人科技導入乳牛場論壇暨2017年高繁天噸牛獎項頒獎會
 Robot Technology for Dairy Cattle Farm & Prolific Ten Tons Cow Award of 2017
 2018年1月16日

乳牛人工授精目視鏡導盲繁殖利器 VIDEO-ASSISTED BOVINE INSEMINATION SYSTEM Mobile Vision Gun for Artificial Insemination in Cattle

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簡報內容

1. 傳統人工受精與目視鏡導引授精
 - a. 乳牛授精前的生殖檢查優勢
 - b. 乳牛授精適期的授精條件與時效優勢
 - c. 乳牛於授精後的檢查優勢
2. 目視鏡導引及注精器之配戴及操作

女牛第一次人工授精

AlphaVision
 Visualization of different cervixes



Heifer - 1st AI Season



Heifer - 1st AI Season



Heifer - 1st AI Season



1 AlphaHealth
 2 Cervixity

懷孕母牛的人工授精

Visualization of different cervixes



Multiparous cow - 2nd Lactation



Multiparous cow - 3rd Lactation



Multiparous cow - 5th Lactation



1 AlphaHealth
 2 Cervixity

1. 傳統人工受精與目視鏡導引授精

■ 乳牛授精前的生殖檢查優勢

- A. 子宮頸和宮頸黏液來判斷是否適合做人工授精
- B. 允許即時診斷的潛在子宮炎生殖問題
- C. 給予記錄動物標識和追蹤或分析圖像品質的變化

■ 乳牛授精適期的授精條件與時效優勢

- A. 不須通過直腸觸診減少對生殖道
- B. 減少技術員手臂疲勞的創傷和動物不適，縮短工期的直腸觸診
- C. 促進困難品種奶牛及提高動物福祉的人工授精技術

■ 乳牛於授精後的檢查優勢

- A. 確認人工授精的質與量
- B. 建置記錄的資料和圖像監控之可追溯性
- C. 提供獸醫診斷圖檔或場內技術人員培訓的

乳牛人工授精(1/2)

1. Clean the animal's vulva by using the same protocol as a standard insemination. 清潔外陰

2. Place B-LUBE gel around the speculum for about 10 cm at its end. 在擴張管末端10公分左右塗上膠



3. Part the vulva. Position the end of the speculum against the vulva. Point the camera upward at a 45° angle. 把擴張管末端朝向外陰，鏡頭向上45度角



4. Gently insert the speculum, aligning it parallel to the vagina. 輕輕的將管子插入，與陰道平行進入



5. Move toward the uterus cervix, by using the image received on the terminal to help you. 以終端影像協助您將管子移動往子宮頸



6. Insert the Kombicolor insemination syringe into AlphaVision. 將Kombicolor insemination 授精槍插入 AlphaVision



乳牛人工授精(2/2)

7. Push the graduated extension until the insemination sheath appears on the image at the entrance to the cervix. 輕推刻度手柄，直到影像中子宮頸入口處出現授精槍



8. Place the Alpha insemination sheath opposite the entrance to the cervix and insert it into the cervix while continuing to push the graduated extension. 將授精套護管置於子宮頸入口，推動刻度手柄使其插入子宮頸，特別注意不要強插，一格度等同於一公分



Important: Do not force!
1 notch = 1 cm

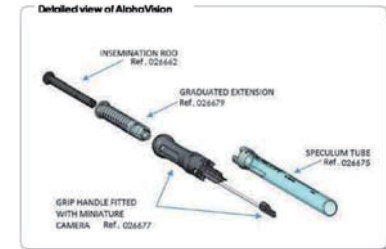
9. Check the correct position of the end of the insemination syringe by rectal palpation. If the syringe is still in the cervix, move cervix over the syringe. 以直腸觸診方式確認授精槍末端已通過子增幾達正確授精位置，如還在子宮頸內則繼續深入

10. Inseminate by gently pressing the rod until it stops and be careful not to move the graduated extension. 輕輕按下授精棒桿，注意不要移動刻度手柄

11. After fully emptying the straw, remove AlphaVision. 在完全注精完畢後取出 AlphaVision

12. Check the entrance of the cervix to ensure that no semen flows back. 檢查外陰確定沒有精液倒流

2. 目視鏡導引及注精器之配戴及操作(1/2)



2. 目視鏡導引及注精器之配戴及操作(2/2)

1. 精液回溫並擦乾後，以麥管切割器剪開賣管密封端



2. 將麥管裝入 Kombicolor 管腔



3. 管套上Alpha保護套，直到完全閉合



4. 把注射器裝到 AlphaVision 的第一刻度



5. Prime the Kombokolor. 裝填 Kombokolor



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乳牛子宮頸口狀況確認

1. Clean the animal's vulva by using the same protocol as a standard insemination. 以同授精時相同的清潔方法清潔外阴

2. Place B-LUBE gel around the speculum for about 10 cm at its end. 在擴張管尾端約10公分左右塗膠



3. Part the vulva. Position the end of the speculum against the vulva. Point the camera upward at a 45° angle. 把擴張末段朝向外陰，鏡頭向上45度角



4. Gently insert the speculum, aligning it parallel to the vagina. 輕輕的將管子插入，與陰道平行進入



5. Move toward the uterus cervix by using the image received on the terminal to help you. 以終端影像協助您將管子移動往子宮頸



6. Use the image to check the condition of the cow's cervix. 以影像確認牛之子宮頸狀態

7. If you want to inseminate, leave AlphaVision in place and go to step 3.4 page 10. Otherwise remove AlphaVision and disassemble and clean. step 5 page 14. 如要直接進行授精，將儀器放在適當位置後參考步驟3.4項。如結束操作則參考步驟五拆卸與清潔

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潛在子宮炎的診斷

Diagnosis of anomalies



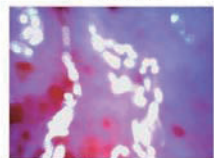
Presence of blood



子宮內膜炎



子宮炎症



All horn lesions



子宮頸囊腫



Metritis and cervical mucus

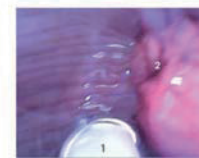
AlphaVISION

IMV Any clinical observation made with AlphaVision must be confirmed and approved by a veterinarian.

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子宮頸部位的變形診斷

Diagnosis of anomalies (deformations)



AlphaVISION

IMV Any clinical observation made with AlphaVision must be confirmed and approved by a veterinarian.

1 AlphaHealth
2 Cervicity

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