Chuang, Shih-Te

Professor

Professional specialty: Diseases and surgery in Ruminants, consultant in dairy cattle and goat farm

Courses Taught:

Undergraduate: Diseases in ruminants, Surgery in large animal, clinical reproduction disorders in dairy cows

Graduate: Advanced topics of disease in dairy cows, Mammary diseases, Advanced topics of surgery in dairy cows

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Educational background, current position and professional career

BS, Department of Veterinary Medicine, National Chung Hsing University (1987)

PhD, College of Veterinary Medicine, University of Munich, Germany (1994)

Associate professor, Department of Veterinary Medicine, National Chung Hsing University (2002-)

Chief of the large animal section in Veterinary Medical Teaching Hospital, National Chung Hsing University (1999-2003, 2009-)

Recent result of research

1. **Streptococcal mastitis in dairy cattle in Taiwan**

   Mastitis is known as one of the most affected diseases in economic benefits of dairy industry in Taiwan. A total of 157 *Streptococcus* species isolates including *S. uberis* (n＝116), *S. bovis* (n＝16), *S. dysgalactiae* (n＝16), *S. agalactiae* (n＝6), *S. equines* (n＝2), and *S. mitis* (n＝1) was isolated and identified in recent 5 years. Among the 157 Streptococcus isolates tested, manifest antimicrobial resistance was observed to amikacin (98.7%), kanamycin (98.7%), streptomycin (98.7%), and neomycin (98.0%) followed by oxytetracycline (85.4%), tetracycline (85.4%) and lincomycin (75.8%). All *Streptococcus* species isolates demonstrated low antimicrobial resistance to the amoxicillin (0.7%), cefuroxime (0.7%), cefazolin (1.9%), ceftiofur (1.9%), bacitracin (3.2%), and cloxacillin (4.5%).

2. **Investigation of Postpartum Diseases in Dairy Cows in Taiwan**

   Dairy cows are prone to various diseases after delivery due to their own genetic properties or improper feeding and management in the farm. The most postpartum diseases were diagnosed as TR 21.7% (30/138), ketosis 18.1% (25/138), DA 15.9% (22/138), RP 12.3% (17/138), and clinical mastitis 8.7% (12/138), respectively. There was closed relationship between TR cases and DA cases ($P<0.01$), also indicated that the cases of ketosis and TR were associated with DA ($P<0.01$), and ketosis cases were associated with RP cases ($P<0.05$). In our study, there were finally 63 (76.8%) affected cows which became recovery or progress after our treatment, and 19 (23.2%) cows were at last dead or sent to slaughter house.

3. **Investigation of bovine leukemia virus in Taiwan**

   Seropositivity was tested by enzyme-linked immunosorbent assay (ELISA) in samples from dairy cattle collected in 16 cities and counties from 2016 to 2017. The animal prevalence and the herd prevalence were found to be 81.8% (540/660) and 99.1% (109/110), respectively. Complete blood

count (CBC) and polymerase chain reaction (PCR) were performed on 152 anticoagulated whole blood samples from healthy dairy cows. A total of 132 (86.8%) cases were found PCR-positive. According to the results, the present BLV genotypes in Taiwan were found to be genotype 1 and genotype 3, and genotype 1 was more prevalent (29/30).

4. **Establishment of health management system in dairy farms.**

   After parturition, the milking cows is more susceptible to develop diseases and to decrease production ability because of stress from calving and milking, decreased dry matter intake, and negative energy balance. To effectively prevent the metabolic diseases, it is important to accurately feed the dairy cows with energy balance. The aim of this study is to monitor the health condition of dairy cows in dry period, post partum, early stage, middle stage, and late stage of lactation by metabolic profile test. In addition, the feeding and management and milk yield performance will be simultaneously monitored with mention of the disadvantage of management to prevent postpartal diseases and to benefit the effect of farm economic.

Selected Publications

1. **Shih-Te Chuang**, Shang-Tse Ho, Po-Wen Tu, Kuan-Yi Li, Yu-Lun Kuo, Jia-Shian Shiu, Sheng-Yao Wang and Ming-Ju Chen*. The Rumen Specific Bacteriome in Dry Dairy Cows and Its Possible Relationship with Phenotypes. Animals 2020, 10 (10), 1791; https://doi.org/10.3390/ani10101791, 2020 Oct.
2. Wittawat Wechtaisong, Sarah I. Bonnet, Yi-Yang Lien, **Shih-Te Chuang**, Yi-Lun Tsai*. Transmission of *Bartonella henselae* within *Rhipicephalus sanguineus*: Data on the Potential Vector Role of the Tick. PLOS Neglected Tropical Diseases. https://doi.org/10.1371/journal.pntd.0008664. 2020 Oct.
3. Yi-Chen Chen; Chao-Chin Chang; Wei-Li Hsu*; **Shih-Te Chuang***. Dairy cattle with bovine leukaemia virus RNA show significantly increased leukocyte counts. Vet J 257: http://dx.doi.org/10.1016/j.tvjl.2020.105449, 2020.
4. **Shih-Te Chuang**, Shang Tse Ho, Po-Wen Tu, Kuan-Yi Li, Yu-Lun Kuo, Jia-Shian Shiu, Sheng-Yao Wang, Ming-Ju Chen. The Rumen Microbiome in Dry Dairy Cows. Reveals the Specific Bacteriome Contributing to Various Physiological Roles and Phenotypes. Research square. https://dx.doi.org/10.21203/rs.3.rs-18992/v1, 2020.
5. Jui-Chun Hsieh, Yi-Feng Hsieh, **Shih-Te Chuang***. Prototheca spp. isolated from bovine milk and the associated minimal algaecide concentration of chlorhexidine and povidone-iodine. Tierärztliche Praxis, 2020. (In print)
6. Hsieh JC, Li CY, Hsu WL, **Chuang SH***. Molecular Epidemiological and Serological Studies of Bovine Leukemia Virus in Taiwan Dairy Cattle. Frontiers in Veterinary Science. 6: 1-9, 2019.
7. Jui-Chun Hsieh, Yu-Shan Yen, **Shih-Te Chuang***. Identification of Streptococcus spp. isolated from bovine milk and characterization of their antimicrobial susceptibility profiles in Taiwan. Thai J Vet Med 49: 57-63, 2019.
8. Galula JU, Chang GJ, **Chuang ST***, Chao DY*. Establishment of an algorithm using prM/E- and NS1-specific IgM antibody-capture enzyme-linked immunosorbent assays in diagnosis of Japanese Encephalitis Virus and West Nile Virus infections in humans. J Clin Microbiol 54: 412-422, 2016.

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