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5th Animal Health and Veterinary Medicine Congress

Can genetic preservation and cloning rescue veterinary medicine?

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The struggle for acceptance that accompanies the end-of-life process that clients and veterinary staff must face is fraught with conflicting values and emotions. It is well-accepted that the primary trigger for compassion fatigue in veterinary practice is moral stress. While stress is part and parcel of veterinary practice, if poorly managed, this stress can lead to burnout, depression, anxiety, relationship conflict (both in the workplace and at home), and even suicide. Dr. David J. Bartram found veterinarians were 5.5 times more likely to have suicidal thoughts than the general population. A 2012 study reported that 66% of practicing veterinarians who responded stated that they had clinical levels of depression, and 24% reported seriously considering suicide. Compare this to the national U.S. depression rate of 6-8%. These numbers have to be even worse for veterinarians and staff engaged in hospice and palliative care. By offering their clients Genetic Preservation and Cloning options, veterinarians can facilitate the acceptance of end-of-life decisions for their pet and, at the same time, relieve some of the emotional baggage that practitioners and the entire veterinary staff have to deal with. While these service may not be for every practitioner, practice, or client, the profession now has a viable answer when a client asks, "But, isn't there anything else we can do?" Anecdotally, a recent About.com poll reported a majority of respondents would clone their cat. This presentation will touch on the basics of genetic preservation and cloning, a brief history of its successful role in equines and food animal production and its potential beneficial applications for companion animal veterinarians.

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Camel Pox Vaccine Production in the Sudan

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The camel population in the Sudan is about 2.5 million heads and camel pox disease is wide spread which leads to high economical losses, disease control is also important for camel export. Camel pox vaccine was produced using a master seed lot which was donated by PANVAC and cultivated on a continuous cell line of African green monkey kidney cell (VERO) and tested for the first time in Sudan. The vaccine was produced according to OIE manual and subjected to potency, safety and efficacy tests in the host animals. The identity test for vaccine virus and locally isolated wild type virus was done as the first step using AGID, VN, and PCR tests. Moreover, sterility test was done for bacterial, mycoplasmas and fungal contaminations. The working seed bank was further tested for safety by inoculation of 6 susceptible camels with 10x, the recommended field dose of camel pox vaccine (10^4 TCID50) using the subcutaneous route. The vaccine efficacy was also demonstrated in 14 healthy susceptible camels. Thus, 10 camels were vaccinated by 10^3 $TCID_{50}$ by S/C route and 4 were inoculated with phosphate buffer saline (PBS) and kept as control. The vaccine was safe and the inoculated animals remained healthy without any adverse reaction, neither signs of illness nor a rise in rectal temperature were recorded for up to 40 days post vaccination. Sero-monitoring of the vaccinated camels revealed production of protective immune response after the fourth week of vaccination, while control camels did not seroconvert. 40 days post vaccination all the vaccinated and control groups were challenged by $10^{5.6}$ $TCID_{50}$ S/C with camel pox. Wild type virus, only the control group developed very severe clinical signs and fever 40°C with generalized and localized camel pox lesions, while the vaccinated groups withstood the test without death or clinical signs. These results confirmed that the produced vaccine batch was safe, and immunogenic under laboratory and field trials, which was conducted using 300 camels.

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