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Animal Care and Use Committee

Standard Operating Procedure (SOP)

**Number** 2001.11

**Version** 1

**Last Updated** 3/7/2001

**Title** Animal and manure handling after exposure to E. coli O157:H7

**Species** Bovine and Ovine

### **Purpose**

To study the relationship between ruminants and the human pathogen.

### **Potential Impact on Animal Subjects**

Neither cattle nor sheep are sick when they have E. coli O157:H7 or other Shiga toxin producing E. coli (STEC) in their gastrointestinal tract. There is no impact on them. However, since some STEC strains are human pathogens (the serotype O157:H7 in particular), all manure will be composted and tested for remaining O157 and no research animal will enter the food chain.

### **Description**

Contaminated manure and bedding will be composted in a quarantined facility on the UI College of Agriculture Experiment Station. The site will be fenced with biohazard warning signs and enclosed by cement curbs. The compost will be turned weekly for a total of 8 weeks. Multiple representative samples from the treated waste will be tested by enrichment culture to determine that the treated waste is free of the O157 serotype. All equipment that comes in contact with the contaminated manure will be disinfected with 0.5% hypochlorite acid.

Animals will be housed in facilities without contact with other animals and the facility will be well marked with biohazard precaution signs. Animals will be euthanized as directed by the campus vet and placed on a rendering truck to assure that they do not enter the food chain.

All personnel will be trained in safety precautions and sterile technique for handling a human pathogen before work with animals or their waste. Briefly, personnel will wear protective clothing including gloves and boots when handling the animals or their waste. Clothing will be sterilized by autoclaving. Street shoes and hands will be disinfected with standard footbaths and hand washing procedures.

### **References**

Kudva, I.T., P.G. Hatfield, and C.J. Hovde. 1995. The effect of diet on the shedding of Escherichia coli O157:H7 in a sheep model. *Appl. Environ. Microbiol.* 61:1363-1370.

Kudva, I.T., K. Blanch, and C.J. Hovde. 1998. Analysis of Escherichia coli O157:H7 survival in ovine or bovine manure and manure slurry. *Appl. Environ. Microbiol.* 64:3166-3174.