Application of Alternative Methods of Body Temp Measurement in Swine

**Vol III**

**Purpose:** Evaluate use of LifeChip® as a means to track body temperature in swine

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**Test Methods**
- Thirty pigs injected subcutaneously and intramuscularly with LifeChip BioThermo® RFID transponder  
- Pigs housed at University of Minnesota isolation facility  
- Three groups of 10 pigs  
- A pig infected with H1N1 influenza was introduced into each group day 1  
- Body temp was measured for seven consecutive days by four methods  
  - Sub-Q transponder (SQ)  
  - Intramuscular transponder (IM)  
  - Infrared camera (IR)  
  - Rectal thermometer (RT)

- Mean temps measurements were compared and correlated  
- Mean temps validity measurements were calculated

**Test Results**
- Measurement Results  
  - RT highest at 104.3 °F  
  - IM next at 103.9 °F  
  - SQ at 100.8 °F  
  - IR at 100.6 °F  
- RT and IM measurements were highly correlated  
  - r=0.86, 95% bootstrap C.I. 0.79, 0.90  
- IR and IM measurements were moderately correlated  
  - r=0.61, 95% bootstrap C.I. 0.47, 0.69

**Discussion**
- Elevated body temp is useful predictor of disease  
- Obtaining body temp measurements rectally can be time consuming and stressful  
- Alternative methods like transponders or IR cameras can provide rapid results  
- IM transponders were highly correlated to core body temp  
- IM transponders seem ideal for monitoring body temp in research setting  
- Further research is needed for review in other species and production settings