

# SWINE RABIES TITER STUDY

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This study was started on 6-21-2010 with thirty study pigs located at 2500 S. Walton, Yuba City, CA 95993. Owner Adam Mendoza raises mixed breed show pigs, York, Duroc, and crossbreeds. The study randomly selected 15 gilts and 15 non-castrated male pigs ranging in age from 17 to 22 days. We had three study groups of ten each. The pig groups were housed in individual pens after the study started.

The purpose of this study is to demonstrate the value of pure Transfer Factor derived from dairy colostrum and a formulation called Runt Buster in titer enhancement. We chose Rabies vaccine Imrab-3; Lot number 12536B made by Merial. As pigs do not inherently carry a titer for Rabies, they were selected as a study base because the pigs' immune system would be naïve to this vaccine.

All of the pigs were farrowed at the above address. Pigs were vaccinated at ten days of age for Mycoplasma, influenza, erysipelas and circovirus.

All pigs were on the same pig starter diet by Sunglo during this study.

## PROTOCOL

Day one pigs were bled for rabies titer, given one cc of rabies vaccine of the above described vaccine given subcutaneously.

**Group 1. Control Group** Five females and five males were bled, given 6 cc of water and one cc of rabies vaccine Imrab-3 by Merial. All pigs were given 10cc of water orally day 1-2-3-4 then pulsed with one cc of water day 9-14- and day 19. Day 21 pigs were bled again and tested for rabies titer at the Kansas State Rabies Laboratory.

**Group 2. Transfer Factor Group** Five females and Five males randomly selected were given one gram of pure transfer factor derived from dairy colostrums orally mixed into 9 cc of water( normal tap water). They were bled and tested for rabies titer and given one cc of rabies vaccine Imrab-3 by Merial. The protocol was one gram of Transfer Factor given orally mixed into 6 cc of water on days 1-4 then pulsed with the same dose given on days 9-14 and day 19. On day 21 pigs were bled and tested for rabies titer at the Kansas State Rabies Laboratory.

**Group 3. Runt Buster Group \*** Five females and five males were randomly selected. These pigs were bled for rabies titer, given two grams of Runt Buster mixed into 6 cc of tap water, and given one cc of rabies vaccine Imrab-3 by Merial. The protocol was two grams of Runt Buster mixed into 6 cc of tap water given orally on days 1-4 then pulsed on days 9-14 and day 19. Pigs were bled on day 21 and tested for rabies titer at the Kansas State Rabies Laboratory.

All lab work was done by K-State Rabies Laboratory, Manhattan KS, using the Rapid Fluorescent Focus Inhibition Test (RFFIT) .

Initial titers on all pigs were less than 0.1 IU/mL, demonstrating a clean study for titer enhancement of from Rabies antigen. The second bleedings were done 21 days later after rabies vaccination. All bloods were centrifuged in serum separator tubes (SST) immediately after the blood draw, the serum was decanted off, and put on ice packs. The separated sera were split into two aliquots, one from each pig was sent by air to K-State Laboratory, the next day, and the other aliquot was stored frozen at the Ramaekers facility in Santa Cruz, CA.

## RESULTS

Spread sheets of the data are attached.

The average rabies RFFIT titers for each group were:

**Group 1. Control Group** had an average rabies titer for the ten pigs was 2.87 IU/mL. But three pigs had rabies titers of < 0.1 IU/ml, and thus were non-responders.

**Group 2. Transfer Factor Group** had an average rabies titer of 3.61 IU/mL with no negative titers ; this represented a 26% increase in titer response over the Control Group.

**Group 3. Runt Buster Group** had an average rabies titer of 12.31 IU/mL . One pig had no titer response, and was a non-responder. This equated to a 429 % increase in vaccine response over the Control Group. One pig had a 78.6 IU/mL vaccine response which illustrates the variation experienced following rabies vaccination. If one removes the high and low responders from this group, the remaining eight pigs had an average rabies titer of 5.55 IU/mL; still significantly higher than those of Groups 1 and 2.

Direct observations on day 21 of the study revealed that the pigs in Group 2 receiving Transfer Factor had the best appearance, although the Runt Buster Group 3 had three pigs that started the study several pounds lighter or were younger. It just worked out that way by random selection. The Group 3 , Runt Buster pigs had good coat and overall condition. The Control Group ! pigs did not have a show sheen or the fullness of growth seen with the Group 2 Transfer Factor or the Group 3 Runt Buster pigs.

## CONCLUSION

This study indicates that Runt Buster and Transfer Factor have a positive effect in enhancing the rabies antibody response to rabies vaccination over the Control Group of pigs. There was also notable improvement in condition and weight performance in the Group 2 and 3 pigs Even though the rabies titer levels of the Transfer Factor group were not as dramatically increased as those of the as the Runt Buster Group , the consistency of vaccine response was impressive, with all but one pig of the 20 Group 2 and 3 pigs responding *versus* three of the control pigs had no measurable antibody response to rabies vaccine.

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\* A proprietary formula providing colostrum-derived peptides and immune-modulating glucans/ heteropolysaccharides plus a comprehensive blend of vitamins, electrolytes, probiotics and powerful immune modulators – designed to facilitate growth and enhance immune function in developmentally immature or underweight young animals.