

Technical Bulletin #37

— FEEDING TRIAL PERFORMANCE REPORT —

Summary: A university feeding trial was conducted in 1998 by Dr. Hsia at National Pingtung University in Taiwan to examine performance of DPS 30, Plasma and Tryptophan on feed intake in low Tryptophan diets for piglets. Piglets fed diets with DPS 30 or Plasma had higher feed intakes versus a control diet.

Materials and Methods: Five different treatment diets were tested. The goal of this experiment was to test the ability of different ingredients to affect feed intake in low Tryptophan feeds. Therefore the major ingredients used in the diets were corn, soybean meal, and meat and bone meal. The five treatments were: Control; 3% DPS 30; 6% DPS 30; 6% Spray Dried Porcine Plasma (SDPP); and incremental Tryptophan. The control diet contained no DPS or SDPP, and had a lower Tryptophan level.

Each treatment had 8 pens with 1 pig penned individually for each pen. The experiment lasted 8 weeks. All diets were designed to have equal metabolizable energy, crude protein, and amino acids (except Tryptophan) levels. The experiment lasted 8 weeks, and all pigs were weighed weekly. The data collected was weekly gain, daily feed intake and feed conversion ratio.

Results: The average daily feed intake and average daily gain are shown in Tables 1 and 2 and Figures 1 and 2.

TABLE 1: Average daily feed intake (ADFI) in grams

Treatment	Control	3% DPS 30	6% DPS 30	6% SDPP	Tryptophan
Week 1	151ab	130b	174ab	237a	122b
Week 2	201b	259b	363a	410a	279b
Week 3	445	499	541	484	478
Week 4	571	739	725	645	662
Week 5	766	919	912	902	840
Week 6	906c	1113ab	1170ab	1193a	1006bc
Week 7	1077b	1423a	1477a	1337a	1282a
Week 8	1182b	1391ab	1602a	1401a	1405a
Weeks 1-2	216	212	269	324	200
Weeks 3-4	508	619	632	564	570
Weeks 5-6	835b	1015ab	1041a	1047a	923b
Weeks 7-8	1129c	1406ab	1539a	1369ab	1343b
Weeks 1-4	362	416	450	444	385
Weeks 5-8	982b	1211a	1290a	1208a	1133ab
Weeks 1-8	672	813	870	826	759

Treatments without common subscripts (a,b,c) differ P< .05

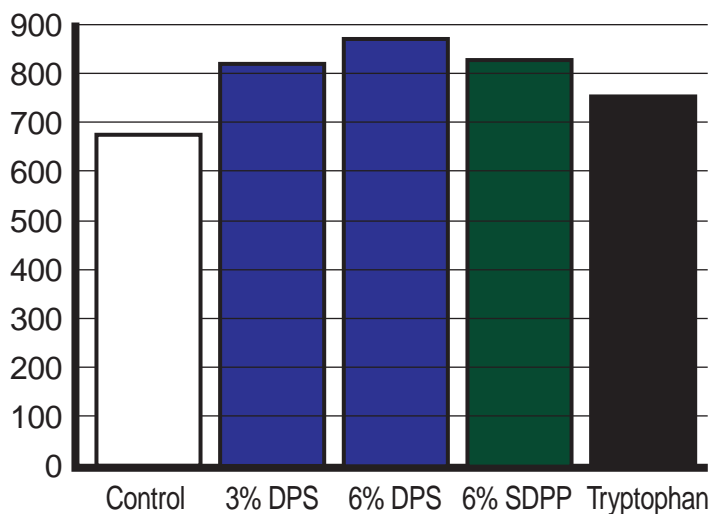
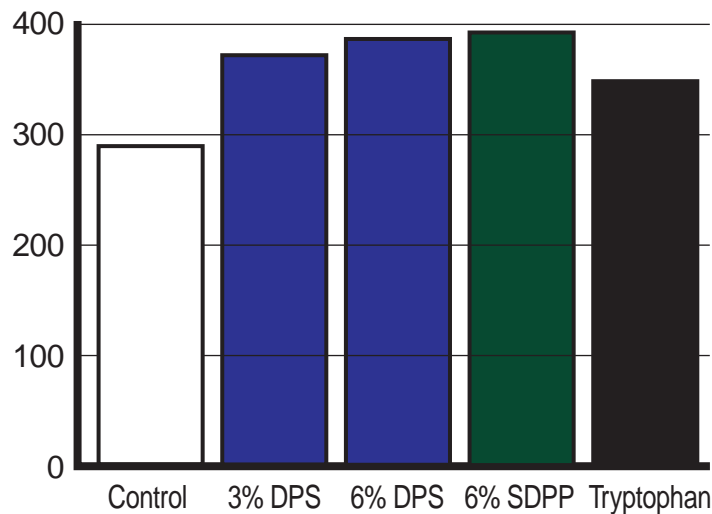
Discussion on ADFI: In week one the treatment with SDPP had significantly higher ADFI than the 3% DPS, and Tryptophan treatments, but not significantly higher than the control or 6% DPS treatments. In week 2 the 6% DPS and SDPP groups had significantly higher ADFI than the other groups. In weeks 6 through 8 there was a trend for all test treatments to have higher ADFI, versus the control group. Overall the pigs in the 6% DPS group had the highest ADFI, followed closely by the SDPP and 3% DPS groups.

TABLE 2: Average daily gain (ADG) in grams

Treatment	Control	3% DPS 30	6% DPS 30	6% SDPP	Tryptophan
Week 1	30b	35b	156ab	171a	61ab
Week 2	138	137	167	198	167
Week 3	245	276	289	208	271
Week 4	257	416	364	337	364
Week 5	418	473	452	533	491
Week 6	325c	400bc	449a	511a	338c
Week 7	443b	583a	586a	579a	580a
Week 8	475b	683a	691a	657a	516ab
Weeks 1-2	83	86	161	185	114
Weeks 3-4	251	346	326	272	318
Weeks 5-6	371b	437ab	457ab	522a	414ab
Weeks 7-8	459b	633a	638a	618a	548ab
Weeks 1-4	167	216	244	229	216
Weeks 5-8	415b	535a	544a	570a	481ab
Weeks 1-8	291	375	394	399	349

Treatments without common subscripts (a,b,c) differ $P < .05$

Discussion on ADG: In week one the SDPP group had significantly higher ADG than the control and 3% DPS groups, but not significantly higher than the 6% DPS or Tryptophan groups. In weeks 6 to 8 there was a trend for all test treatments to have higher ADG versus the control group. Overall the pigs in the 6% DPS 30, and SDPP groups had the highest ADG, followed closely by the 3% DPS Group.

FIGURE 1. ADFI (weeks 1-8)**FIGURE 2. ADG (weeks 1-8)**

Summary: The treatments with 6% DPS 30 and SDPP had the highest numerical increase in ADFI versus the control group. 6% DPS 30 provided numerically higher ADFI versus the 3% DPS 30. There appeared to be some advantage to adding Tryptophan versus the control group, but not versus the DPS or Plasma groups.

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