

WINTER PROTECTION FOR FATTENING SWINE

The objectives of this trial are: to determine the effect of windbreak protection of the feeding area on winter gains; and, to compare the effect of different combinations of portable houses and windbreaks on winter gains.

The portable house used throughout this trial is a well constructed house 8 feet wide and 10 feet long, with a 2'x3' door opening.

The windbreak used in this trial is a solid board fence 39 inches high, and protects the feeding area on the north and west.

The following four shelter combinations were compared.

Shelter #1 was house only, with open door, and no windbreak protection for the feeding area.

Shelter #2 was a house with open door, plus windbreak protection for the feeding area.

Shelter #3 was a house with swinging door, plus windbreak protection for the feeding area.

Shelter #4 was a house equipped with an "L" shaped tunnel entrance, plus windbreak protection for the feeding area.

A 16 percent Protein Barley-Oats-Soybean Oilmeal ration was self fed to all lots.

Table 4 shows the composition and cost of the ration used. Table 5 summarizes the data on weights and gains recorded in this trial. Table 6 lists feed used and cost per hundredweight of gain, and Table 7 compares high and low temperatures and wind movement for the 1969-70 feeding period with previous years.

Table 4. Ration Composition and Feed Cost.

Ration ingredient	Pounds per ton	Cost per pound	Cost per ton
Oats	564	.0171	\$ 9.64
Barley	1138	.0177	20.14
Soybean oilmeal	238	.0535	12.73
Di-calcium phosphate	24	.060	1.44
Limestone	24	.025	.60
Trace mineral salt	10	.025	.26
Fortafeed	680 gms.	.0005	.34
Vitamin A	60 gms.	.0011	.06
Vitamin D	28 gms.	.0053	.14
Zinc sulfate	360 gms.	.0052	1.88
Grinding	-	-	2.00
Total			\$49.23

Table 5. Data on Weights and Gains in the Shelter Comparison Stud.

	Treatment 1	Treatment 2	Treatment 3	Treatment 4
Data on:	House only	House plus windbreak	House with door plus windbreak	House with tunnel plus windbreak
Number of pigs per lot	11	11	11	10
Initial weight – lbs.				
Total per lot	520	520	523	482
Average per pig	47.3	47.3	47.5	48.2
Final weight – lbs.				
Total per lot	2393	2490	2463	2262
Average per pig	217.5	226.4	223.9	226.2
Gain per lot – lbs.	1873	1970	1940	1780
Average daily gain per pig – lbs.	1.38	1.43	1.41	1.42

Table 6. Feed Used and Cost Per Hundredweight of Gain in the Shelter Comparison Study.

	Treatment 1	Treatment 2	Treatment 3	Treatment 4
Data on:	House only	House plus windbreak	House with door plus windbreak	House with tunnel plus windbreak
Total pounds of feed	7300	7920	7310	7190
Pounds of feed per hundredweight gain	389.7	402.0	376.8	403.9
Cost per hundredweight of gain	\$9.59	\$9.89	\$9.27	\$9.94

Table 7. Comparison of High and Low Temperatures and Wind Movement For A Twenty Four Hour Period.

	Average Totals				
	November	December	January	February	March
High temperatures ^{1/}					
1969-70	46.4	30.4	15.2	28.6	30.9
1968-69	39.4	15.7	6.9	22.0	27.6
1967-68	40.9	27.0	22.5	25.5	49.3
1966-67	34.1	28.4	26.0	25.7	39.0
1965-66	40.2	36.3	10.4	21.4	43.4
1964-65	36.5	12.9	18.1	23.2	22.0
Total	191.0	120.3	83.9	117.8	181.3
5-Yr. average	38.2	24.1	16.8	23.6	36.3
Low temperature ^{2/}					
1969-70	18.6	11.1	-4.5	6.4	9.8
1968-69	19.7	0.8	-8.7	3.0	10.6
1967-68	18.0	5.0	1.1	4.4	21.3
1966-67	11.1	7.1	3.5	0.8	16.0
1965-66	16.2	12.1	-10.5	1.4	18.0
1964-65	10.3	-4.9	-4.3	-1.5	2.9
Total	75.3	20.1	-18.9	8.1	68.8
5-Yr. average	15.1	4.0	-3.8	1.6	13.8
24 Hour wind movement ^{3/}					
1969-70	64.0	72.0	68.4	75.7	78.4
1968-69	74.5	83.1	93.9	90.7	83.5
1967-68	93.2	81.5	79.7	121.2	97.3
1966-67	79.0	64.2	91.9	108.9	93.5
1965-66	72.0	77.1	95.5	113.6	115.3
1964-65	77.0	123.9	71.7	102.5	150.6
Total	395.7	429.8	432.7	536.9	540.2
5-Yr. average	79.1	86.0	86.5	107.4	108.0
^{1/} and ^{2/} High and low temperature are in degrees Farenheit.					
^{3/} Total wind data is total movement for a 24 hour period. Average wind velocity is found by dividing total wind movement by 24.					

Summary

The data presented in Table 5 show that using the windbreak around the feeding area improved the average daily gain by .05 pounds. However, feed efficiency did not appear to be affected by the different shelter treatments provided.

The data in Table 7 might help to explain the small differences between shelter treatments. These data show that temperatures generally were higher and total wind movement lower for the 1969-70 feeding period than for five year average.

Additional studies will be necessary to better evaluate the effect of shelter on pig performance in the feed lot during winters when the weather is more severe than it was for the year 1969-70 trial.