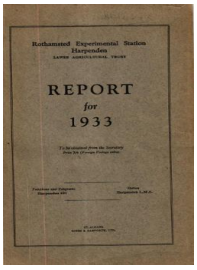
ROTHAMSTED RESEARCH

Report for 1933

Full Table of Content



Animal Husbandry Experiments

Rothamsted Research

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PIG EXPERIMENT

The Value of Green Food.
Comparison of Wet and Dry Feeding.
Effects of differing numbers of pigs per pen (with equal floor space per pig).

ARRANGEMENT

Three randomised blocks of 4 litters of 6 pigs each, sex and litter being equalised as far as possible over the different treatments (the interaction of the feeding treatments is partially confounded with litters, and in blocks II and III sex is also partially confounded with litters). Each block contains one pen of 8 pigs (13 ft. × 6 ft. 3 ins.), two pens of 4 pigs (6 ft. 6 ins. × 6 ft. 3 ins.) and 4 pens of 2 pigs (3 ft. 3 ins. × 6 ft. 3 ins.). Each of these sets of pens contains two pigs on each of the four feeding treatments, namely wet or dry feeding with or without green food. Pigs were fed individually in small pens (1 ft. 8 ins. × 3 ft. 7 ins.) opening off the main pens. Food consumption and live weights were recorded weekly.

DETAILS OF ARRANGEMENT

Block and Duration.	Block I (21 weeks)								Block II (22 weeks)								Block III (20 weeks)							
Litter No.	9		12		19		21		17		20		29		48		27		28		35		58	
Age at start (wks.) ..	7.9		10.9		13.6		12.0		9.7		11.7		11.3		12.1		8.1		10.4		10.7		12.6	
Sex	H	G	H	G	H	G	H	G	H	G	H	G	H	G	H	G	H	G	All H		All G		H	G
Dry and Green Food	8	2	2	8	–	4	4	–	8	–	4	2	–	8	2	4	–	2	8	4	8	4	2	–
Wet and Green Food	–	4	4	–	2	8	8	2	2	4	–	8	4	2	8	–	4	8	2		2		8	4
Dry Food	4	–	–	4	2	8	8	2	2	4	–	8	4	2	8	–	4	8	2		2		8	4
Wet Food	8	2	2	8	4	–	–	4	–	8	4	2	8	–	2	4	–	2	8	4	8	4	2	–

The number 2, 4 or 8 indicates that the pig was one of a pen of 2, 4 or 8 respectively.
H denotes hog (*i.e.* castrated male); G denotes gilt (*i.e.* female).

FEEDING RATIONS

		Percentage Rations.			
Weeks of Experiment	Blocks I	1—3	4	5—18	19—21
	Blocks II ..	1—3	4	5—14	15—22
	Blocks III	1—3	4	5—9	10—20
Middlings		60	50	40	28
Bran		—	—	—	14
Hominy chop		—	15	20	18
Barley meal		20	25	30	30
Flaked maize		10	—	—	—
Fish meal		10	10	—	—
Meat meal		—	—	10	10

Two per cent. minerals (3 parts lime, 1 part salt) added to each ration.
Green food (kale, wheat, oats and vetches) fed twice daily at the rate of about ½ lb. per head per day.

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INITIAL AND FINAL WEIGHTS AND FOOD CONSUMPTION

Pigs receiving Green Food

Block.			I				II				III			
Litter.			9	12	19	21	17	20	29	48	27	28	35	58
Initial Weights (lb.)														
Dry	Hogs	..	21	37	—	40	38	35	—	42	—	56	35†	42
	Gilts	.. ..	24	25	45	—	—	47	44	36	41	50*	38	—
Wet	Hogs	.. ..	—	29	47	30	37	—	41	43	58	50	—	63
	Gilts	.. ..	28	—	50	37	40	47	57	—	49	—	43	43
Final Weights (lb.)														
Dry	Hogs	..	**	218	—	205	172	**	—	133	—	196	124†	145
	Gilts	.. ..	151	142	191	—	—	163	170	153	**	168*	136	—
Wet	Hogs	.. ..	—	190	229	205	182	—	190	176	149	220	—	Sold
	Gilts	.. ..	194	—	232	212	185	214	224	—	226	—	186	206
Total Food Consumption (lb.)														
Dry	Hogs	..	**	719	—	688	629	**	—	565	—	739	356†	542
	Gilts	.. ..	516	502	598	—	—	607	521	548	**	556*	413	—
Wet	Hogs	.. ..	—	637	873	781	685	—	685	718	489	785	—	861
	Gilts	.. ..	649	—	908	844	707	844	844	—	819	—	690	688

* Hog. † Gilt. ** Pig died.

DETAILS

Block	I	II	III	Mean or Total
Commenced	April 11th	May 10th	June 15th	—
Time (weeks)	21	22	20	21
Average age at start (weeks) ..	11.1	11.2	10.5	10.9
Average wt. (lb.) At start	35.6	32.9	41.2	36.6
Average wt. (lb.) At end	197.2	178.4	180.1	185.2
Number of pigs receiving green food rejected	1	1	3	5
Regression of final on initial wt. ..	4.51	3.52	2.81	3.68

STANDARD ERRORS OF TOTAL LIVE-WEIGHT INCREASE

(Per Pig—lb. and per cent. of Increase)

Without elimination of differences of initial weight	16.1 lb. or 10.8%
With elimination of differences of initial weight	11.3 lb. or 7.60%
With elimination of initial weight and food consumption	9.3 lb. or 6.29%
Means of two initial and two final weights (initial weight eliminated) ..	9.9 lb. or 7.02%

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SUMMARY OF RESULTS

EFFECT OF LACK OF GREEN FOOD

	Doing badly and removed from experiment	Lost weight during two or more weeks (excluding those removed)	Remained till end of experiment.
Without Green Food ..	13	15	8
With Green Food ..	3	4	29

WET AND DRY FEEDING

Block	I	II	III	Total or Mean
Increase per pig per week (lbs.)				
Mean of Wet and Dry	7.70	6.61	6.94	7.08
Difference (W—D)	+1.18	+1.23	+2.47	+1.63
Standard Error of difference	±0.339	±0.324	±0.398	±0.205
Food per 1 lb. increase (lbs.)				
Mean of Wet and Dry	4.306	4.596	4.504	4.469
Difference (W—D)	+0.334	+0.196	−0.159	+0.124
Standard Error of difference	±0.234	±0.234	±0.262	±0.141

EFFECTS OF NUMBERS IN PEN

Mean Final Weights adjusted for differences of initial weight

Block	I	II	III	Mean
Two in a pen ..	196.1	173.4	185.7	185.1
Four in a pen ..	191.3	179.0	175.4	181.9
Eight in a pen ..	190.6	179.9	179.2	183.2

CONCLUSIONS

Green food appears essential to the health of young pigs kept under the conditions of the experiment. Pigs on wet food had a significantly greater live weight increase than those on dry food, owing to the greater amount of wet food consumed ; there was no significant difference in efficiency of food utilisation for the two types of feeding. Variation of numbers in a pen (with equal floor space per pig) appears to have no effect.

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