

WEIGHTS AND BODY MEASUREMENTS OF EUROPEAN WILD HOGS IN TENNESSEE¹

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ABSTRACT

Weights and body measurements were determined for European wild hogs in eastern Tennessee. Average measurements of adults in the fall were: whole weight—180 pounds for males and 155 pounds for females, ear length—141 mm, tail length—257 mm, hind foot length—281 mm, and total length—1661 mm. Maximum figures for some other measurements of adults in the fall were: shoulder height—864 mm, hip height—864 mm, skull length—432 mm, chest girth—1321 mm, and tusk length—121 mm. Average measurements of pen-reared pigs at birth were: weight—2.2 pounds, ear length—41.6 mm, tail length—61.5 mm, and hind foot length—77.8 mm.

The European wild hog (*Sus scrofa*) was introduced into the southern Appalachians in 1912 (Jones 1959). It adjusted well to the environment of the Appalachians and is now a valuable big game species in the area. From the time of introduction, much was written about the new animal. It is evident from newspaper accounts and other miscellaneous publications that more fiction than fact was written about the size of the animal in the southern Appalachians. Some interbreeding with feral domestic hogs has occurred but genetic studies (Rary, *et al.* 1968) indicate the ancestry to be predominantly European stock and phenotypes are also indicative of European hogs.

Literature on the European wild hog in its native home makes little mention of body measurements and lists weights for the species that are much greater than the weights obtained in the southern Appalachians (Boback 1957). No scientifically verified data have been published concerning the size of the European wild hog in North America.

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METHODS AND PROCEDURE

Data for this study were compiled from three sources. One source was hogs killed during the annual fall (October-December) hunts on the Tellico Wildlife Management Area in eastern Tennessee, where hunters were required by law to check kills through one of three checking stations on the area. Game and Fish Commission personnel at these stations recorded biological

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data, including weights and body measurements. The second source was hogs trapped on the Tellico area (Matschke 1962). Trapping is conducted throughout the year except during big-game hunts. The third source of data was pen-reared hogs used in reproductive studies. New-born pigs of pen-reared sows were weighed and measured.

Because of seasonal weight fluctuations, it was felt that the data for this study should be confined to one season of the year. Therefore, the basic data for this study were from the animals killed during the fall hunts. Since hogs less than seven weeks old are not normally killed in the fall, trapped animals provided data for young pigs and pen-reared hogs provided data on new-born pigs.

The data for this study were obtained during the years 1960 through 1967. The age classes listed are from Matschke (1967), and are based on tooth eruption. The variation in tooth eruption causes some slight overlap of age classes.

The dressed weights are weights of animals in which all viscera including lungs, heart and liver, have been removed. Whole weights are actual weights before dressing and not weights calculated by formula from dressed weights.

RESULTS AND DISCUSSION

Average measurements of animals over two years old killed in fall hunts are: whole weight—180 pounds for males and 155 pounds for females, ear length—141 mm, tail length—257 mm, hind foot length—281 mm, and total body length (nose to tip of tail)—1661 mm (Table 1). Maximum figures for other measurements that were recorded for some animals of unknown age are presented in Table 2. The reason for listing only maximum figures in Table 2 is that the sample contained animals of all ages, including very young hogs, thus making average figures or ranges meaningless.

In the fall, when the above data were collected, the animals are normally in prime condition and the sows pregnant. Weights of adult animals obviously fluctuate widely, depending on food conditions. Adult animals have been known to lose as much as 34.7 percent of their body weight in 99 days, and as much as 9.7 percent in five days and 18.2 percent in only 13 days. Data gathered over a period of six years were studied, and no seasonal pattern was distinguishable because food conditions at a given season varied from year to year.

Weights and body measurements of trapped European wild hogs less than seven weeks old are presented in Table 3. Average measurements for pigs at birth are

TABLE 1. Weights and measurements by age classes of European wild hogs killed during fall hunts, Tellico Wildlife Management Area, 1958-1967.

Age	Sex	Whole Wt. (lbs.)		Dressed Wt. (lbs.)		Ear Length (mm)	
		Avg.*	Range	Avg.*	Range	Avg.*	Range
7-19 wks.	M	23.0(3)	16.5-33	24.9(12)	14-41	85.4(7)	76-102
	F	26.0(1)	--	24.1(12)	13-37.5	85.7(4)	76-102
20-33 wks.	M	77.5(2)	61-94	38.8(32)	21-67	108.6(22)	86-146
	F	50.2(6)	28-76	44.0(27)	20-74	108.3(11)	86-127
30-51 wks.	M	97.2(2)	96-98.5	58.3(49)	41-82	109.5(28)	96-127
	F	80.3(9)	55-95	55.2(40)	23-79	111.8(29)	89-127
12-15 mo.	M	98.0(1)	--	73.8(5)	59-90	131.4(5)	127-140
	F	99.0(6)	--	73.6(12)	44-110	123.5(7)	108-140
14-18 mo.	M	114.4(4)	68.5-167	87.3(29)**	46.5-133	132.1(20)	108-152
	F	121.0(5)	84-173	81.1(29)**	51-126	126.7(20)	108-152
18-22 mo.	M	152.8(3)	124.5-203	106.5(12)**	72-170	136.2(7)	127-149
	F	109.8(4)	81-123	88.4(15)**	57-112	127.3(11)	114-133
21-26 mo.	M	157.2(4)	147-168	118.5(17)**	85-156	132.4(6)	114-146
	F	140.5(4)	135-145	104.6(23)**	66-155	123.8(9)	89-140
21+ mo.	M	171.0(8)	142-215	124.7(36)**	66-183	148.6(37)	127-171
	F	119.8(11)	84-161	96.0(52)**	60-155	139.1(52)	121-156
26+ mo.	M	179.6(11)	132-226	139.4(76)**	85-233	143.5(50)	127-165
	F	155.2(24)	97-203	127.0(103)**	69-200	140.0(74)	108-178
Unknown	M	(13)	42-223	(76)	13-174.5	(124)	76-178
	F	(16)	42-215	(73)	31-178	(129)	70-171

* Figures in parenthesis represent the number of animals in the sample.

** T-test reveals significant differences between sexes at the 95 percent confidence level.

H.F.- Hind foot.

as follows: weight 989 grams (2.2 pounds), ear length 41.6 mm, tail length 61.5 mm, and hind foot length 77.8 mm (Table 4).

Crown-rump measurements of pen-reared European wild hog fetuses have been published (Henry 1968).

No significant differences (t-test, 95% confidence level) occur between the sexes until 14-18 months of age (Table 1), at which time males become larger.

Weights listed by other authors for European wild hogs in this country and in their native home are usually much greater than those here listed. Weights up to 500 and 600 pounds have been recorded for European animals (Boback 1957), which are fed during the winter months when they are hunted. In the North Carolina-Tennessee area, weights over 300 pounds are usually overestimates. The largest animals killed on the

Tellico area were a boar killed in 1965 that weighed 233 pounds dressed and two sows, killed in 1963 and 1965, that dressed out 200 pounds. Whole weight for these animals, calculated from regression equations (Henry 1969), were 289 pounds for the male and 258 pounds for the females. However, penned animals may weigh considerably more. Weights approaching 500 pounds have been recorded for the captive animals used for breeding studies. It is suspected by the author that the 233 pound boar killed in 1965 was a pen-reared animal because deposits of feces were found in the hair and between the hooves and because of the lack of a streamlined appearance typical of wild animals. This would make 258 pounds the maximum whole weight recorded. European wild hogs over 250 pounds are thus suspect as being pen-reared or crossed with domestic stock.

TABLE 1. (Continued)

Tail Length mm		H. F. Length mm		Total Length mm	
Avg.*	Range	Avg.*	Range	Avg.*	Range
128.9(7)	85-165	167.3(7)	121-203	876.3(2)	762-991
163.5(4)	114-216	171.4(4)	140-229	876.3(1)	--
179.1(22)	108-241	224.8(22)	159-267	1158.2(10)	838-1473
192.7(11)	146-254	214.6(11)	165-254	1211.6(6)	1067-1346
186.1(25)	155-229	241.6(27)	187-273	1270.0(11)	1092-1410
195.9(28)	127-279	231.5(27)	171-267	1275.1(11)	1041-1448
222.9(5)	178-251	271.8(5)	267-279	1437.6(2)	1410-1438
215.9(7)	165-254	255.3(7)	229-267	1381.8(3)	1156-1544
233.0(20)	190-279	271.1(20)	171-305	1493.5(9)	1295-1676
225.4(18)	171-267	265.4(20)	241-292	1478.3(8)	1245-1727
253.4(8)	184-330	280.0(8)	257-305	1676.4(4)	1473-1930
248.9(10)	203-305	260.4(11)	241-276	1437.6(7)	1219-1524
250.2(5)	229-270	281.6(6)	254-302	1546.9(5)	1371-1656
257.8(9)	241-292	270.2(9)	254-302	1513.8(7)	1448-1575
271.1(35)	216-318	298.4(37)	260-321	1651.0(26)	1499-1778
261.3(52)	203-318	277.2(52)	200-318	1562.1(25)	1397-1702
258.4(51)	178-350	288.3(51)	254-318	1694.2(20)	1524-1943
255.0(72)	171-305	275.3(72)	235-305	1628.1(23)	1498-1783
(124)	102-356	(130)	152-311	(83)	615-2083
(135)	127-330	(133)	111-318	(77)	584-1676

TABLE 2. Measurements of European wild hogs of unknown age killed during fall hunts, Tellico Wildlife Management Area, 1958-1967.

Measurement (mm)	Male		Female	
	Number Measured	Maximum Measurement	Number Measured	Maximum Measurement
Shoulder Height	57	864	50	787
Hip Height	65	864	62	813
Skull Length	73	432	63	406
Chest Girth	4	1321	2	1118
Tusk Length (Lower canine length above gum line)	40 ((78)*)	121	24 (48)*	67

* Figures in parenthesis indicate number of teeth measured, other figures are the number of animals.

TABLE 3. Weights and body measurements of European wild hogs trapped on the Tellico Wildlife Management Area, Tennessee, 1960-67.

Age (Days)	Sex	Whole Weight (lbs.)		Ear Length mm		Tail Length mm		H. F. Length mm		Total Length mm	
		Avg.*	Range	Avg.*	Range	Avg.*	Range	Avg.*	Range	Avg.*	Range
0-6	M	4.0(1)	-	50.8(1)	-	76.2(1)	-	95.2(1)	-	-	-
7-22	M	8.2(2)	7-9.5	38.1(1)	-	114.3(1)	-	133.4(1)	-	-	-
	F	6.6(2)	6.2-7	-	-	-	-	-	-	-	-
23-40	M	9.7(3)	6-13	66.7(3)	57-73	96.2(3)	76-108	127.0(3)	114-140	-	-
	F	9.8(6)	6.5-13	73.0(4)	48-92	95.8(4)	76-108	128.6(4)	114-140	612.1(1)	-
41-49	M	13.6(5)	12-16	75.2(3)	73-76	101.6(3)	83-114	135.6(3)	133-140	-	-
	F	11.9(15)	6-16	66.4(14)	48-76	102.8(15)	64-133	131.8(15)	102-152	729.0(3)	691-782

* Figures in parenthesis represent the number of animals in the sample.

H. F. - Hind foot.

TABLE 4. Weights and body measurements of pen-reared European wild hog pigs at birth

Sex	Number	Weight (grams)		Hind foot Length mm		Tail Length mm		Ear Length mm		
		Avg.	Range	Avg.	Range	Avg.	Range	Avg.	Range	
M	25	1041.0	661.7-1469.5	13	82.8	76-95	61.6	51-70	43.5	38-51
F	14	881.6	612.6-1116.3	9	70.2	41-83	61.0	51-70	38.7	32-44
Total	39	983.8	612.6-1469.5	22	77.8	41-95	61.5	51-70	41.6	32-51

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