

# DRESSED VERSUS UNDRESSED WEIGHT RELATIONSHIP IN WILD BOARS (*Sus scrofa*) FROM ITALY

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**Abstract:** We have examined a sample of 176 wild boars from Tuscany (Central Italy) to investigate the relationship between eviscerated and whole weights. Regression lines were fitted, which resulted in equations enabling more accurate comparisons between data from capture and shooting.

**Keywords:** Wild boar, *Sus scrofa*, Suidae, Dressed weight.

IBEX J.M.E. 3:72-73

## 1. Introduction

As for many other Ungulates, body size and body growth of the Wild boar *Sus scrofa* are known mainly from hunting statistics, which use dressed or eviscerated weight; whole or live weights are very rare and generally result from capture. Knowing the whole weight of the animal can be useful in many cases, but becomes indispensable for studies on productivity (biomass estimates) and bioenergetics (metabolic rate calculations).

According to Briedermann (1986) the dressed weight of the Wild boar normally equals about 80% of the whole weight. From Central Europe Stubbe *et al.* (1980) and Bader (1983), with samples of only 11 and 33 individuals respectively, found a mean dressed/live weight ratio of 0.765 and 0.795. In the U.S.A., from a sample of 121 Wild boar x feral pig hybrids, Henry (1969) reported a mean value of 78.6% for dressed mass of males and 76.5% for females, also fitting two distinct regression lines. Landry (in Gaillard & Jullien, 1993) from a sample of double weights from 49 Wild boar females obtained a formula to reconstruct live weight.

There is no published data for Italy. We have investigated the relationship between dressed and undressed weights in a sample of 176 wild boars from Tuscany, Central Italy. Determining the relationship between the two kinds of weight will enable easier and more correct comparisons between data from capture and shooting.

## 2. Study area, material and methods

The study was conducted in different areas of Tuscany (Casentino, Valtiberina, Valdelsa, Val

di Cecina) during late autumn and winter from 1988 to 1991. Animals brought to the check stations were weighed on a platform scale or a hanging scale to the nearest 0.1 kg.

The undressed or bled carcass weight is the weight of the freshly shot animal, *i.e.* the carcass minus blood and tissue loss from gunshot wounds. Here we take the undressed weight as a good approximation of the whole weight, however bleedable blood can amount to a not negligible quantity (Briedermann *op. cit.*, tab.3/1). The dressed weight is the weight of the animal without thoracic and abdominal organs ("field-dressed weight" of Langvatn, 1977).

## 3. Results

Whole weights ranged from 23.2 to 123 kg for males (n = 72) and from 15.5 to 97.2 kg for females (n = 104). Dressed weights ranged respectively from 18.8 to 102.3 kg and from 14.2 to 81 kg.

On average for medium-sized animals dressed weight represented 82.8% of undressed weight in males and 83.0 % in females. In other words males lost an average of 17.2% of their weight in dressing, while females averaged a loss of 17.0%: ranges were 8.7-26.7% for males and 8.4-25.7% for females. The corresponding partial-to-whole-weight conversion factors (reciprocal of dressing percentages) were 1.208 and 1.204 respectively.

Linear regression lines were fitted to the data, resulting in distinct equations for males and females. The regression lines were not significantly different in variance, slope or elevation. Combining both sexes, the dressed *vs* undressed

Table 1. Conversion chart (rounded numbers).

Dressed weight	live weight
11.8	15.0
15.0	19.0
16.0	20.0
20.0	24.9
24.5	30.0
25.0	30.8
28.7	35.0
30.0	36.6
33.0	40.0
35.0	42.5
37.2	45.0
40.0	48.4
41.4	50.0
45.0	54.2
45.7	55.0
50.0	60.0
54.1	65.0
55.0	66.0
58.3	70.0
60.0	71.8
62.6	75.0
65.0	77.7
66.8	80.0
70.0	83.6
71.0	85.0
75.0	89.4
75.3	90.0
80.0	95.3
83.7	100.0
85.0	101.2
87.9	105.0
90.0	107.0
92.2	110.0
95.0	112.9
96.4	115.0
100.0	118.8
100.6	120.0
105.0	124.6

sed weight regression was  $y = 1.4154 + 1.1735x$ , where  $y$  is the undressed weight and  $x$  is the dressed weight ( $R^2 = 0.993$ ;  $F_{1, 174} = 23582$ ,  $p < 0.001$ ) (Fig. 1). The mean deviation of estimated undressed weight from the actual whole weights was 1.3 % (SD = 1.1).

If we know the whole weight, we can predict the weight after dressing by using the equation  $y' = -0.8784 + 0.8459x'$ , with  $y'$  representing dressed weight and  $x'$  the undressed weight.

The internal organs account for a larger proportion of the whole weight in small animals

than in larger ones: the dressing percentage estimated by the formula varies from 79% in wild boars of 18-19 kg (live weight) to 84% in individuals of 120-125 kg (see tab. 1).

**4. Acknowledgements**

We wish to thank C. Lovari, L. Mattioli, V. Mazzarone and N. Siemoni, who assisted us in the data collection. F. Calovi and R. Mazzoni della Stella kindly made available further weight figures from the province of Siena. The study was financially supported by the "Comunità Montana Val di Cecina".

**REFERENCES**

BADER W.,(1983) - *Untersuchungen beim Wildschwein*. Dissertation, München, 85 pp.  
 BRIEDERMANN L., (1986) - *Schwarzwild*. VEB, Berlin, 540 pp.  
 GAILLARD J.M. & JULLIEN J.M., (1993) - Body weight effect on reproduction of young Wild boar females: a comparative analysis. *Folia Zoologica*, 42: 204-212.  
 HENRY V.G., (1969) - Estimating whole weights from dressed weights for European wild hogs. *J. Wildl. Manage.* 33: 222-225.  
 LANGVATN R., (1977) - *Criteria of physical condition, growth and development in Cervidae, suitable for routine studies*. Nordic Council for Wildlife Research, Stockholm: 1-27.  
 STUBBE I., STUBBE M. & STUBBE W., (1980) - Die Körperentwicklung des Schwarzwildes im Wildforschungsgebiet Hakel. *Beitr. Jagd- und Wildforsch.*, 11: 245-259.

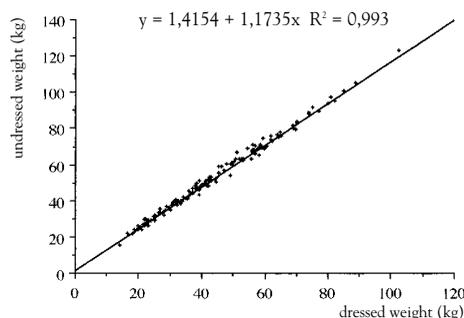


Figure 1 - Regression of undressed weight on dressed weight for 176 wild boars from Central Italy.