

# **WILD BOARS (*Sus scrofa scrofa* L.) AROUND CHERNOBYL, UKRAINE. SEASONAL FEED CHOICE IN AN ENVIRONMENT UNDER TRANSITION - A BASELINE STUDY.**

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**Abstract:** After the accident at the atomic powerplant in April 1986, the 30 km zone around underwent a drastic change. The inhabitants were transferred and agricultural lands were abandoned and left to develop in any direction. This study, dealing with the transfer of radionuclides from food to wild animals' (e.g. Wild boar) tissues, began in June 1992. As preliminary result, a full one year cycle of boar's forage choice is presented here.

**Keywords:** Wild boar, *Sus scrofa*, Suidae, Food selection, Stomach contents, Radionuclides.

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## **1. Introduction**

After the accident in the nuclear powerplant of Chernobyl on April 26, 1986, the wildlife habitats in the area, roughly 30 km in radius have changed drastically. The inhabitants (ca. 90,000) and their livestock were immediately evacuated. The local drainage system was not maintained, and arable land, 50% of the zone, was abandoned and is expected to return to forest typical of the region. Neither crops nor game have been legally harvested since the accident. The overall goal of the project is to study the transfer of radionuclides from feed to tissues of Wild boar and Roe deer (*Capreolus capreolus* L.). The limited goal of this paper is to report on the seasonal diet of wild boars within the abandoned 30 km zone around the powerplant.

## **2. Material and methods**

The research area is situated in the Polesie region. It is characterized by a mainly low and flat relief (110-145 m u.s.l.) with river floodplains, terraces, end-moraine ridges, moraine fluvio-glacial and limnoglacial plains. Rather infertile sandy soils dominate the upper levels, where fallow arable land occupies the major part. Grassland with *Elytrigia repens* (L.) Nevski, *Festuca ovina* L., *Festuca rubra* L., and *Oenothera biennis* L. is dominant.

Planted forests with Scots pine (*Pinus sylvestris* L.) of various ages, sometimes occasionally with oak (*Quercus robur* L.) in the understory occur in the upland sandy areas. *Alnus glutinosa* (L.) Baertn dominates low-lying swamp forest.

The lower level of the zone is occupied by the flood plains of the River Pripyat and its tributaries are covered by *Salix acutifolia* Wells, xerophytic shrubs, forbs and graminids.

Stomach contents from groups of about six boars, were and will be sampled annually during 1992-1995 in February, May, August and October.

Quantitative botanical analyses of stomach contents (cf. Scotter, 1967; Eriksson, 1981) are conducted. Sampling is carried out in early mornings, evenings as well as late nights. Efforts are made to obtain specimens that are unruffled. From a radioecological and ethical point of view weaned and non-lactating specimens are preferred. The mineral content of stomach ingesta is determined after freeze drying and ashing in a muffle furnace.

## **3. Results and discussion**

It must be emphasized that results shown are based only on specimens obtained during about the first year of sampling. Regarding age, live weight and sampling period see table 1.

Figure 1 shows that the summer diet (samples of June 1992 and August 1993 combined) consists of herbs, dominated by leaves of *Oenothera biennis* L., *Elytrigia repens* L. as well as wheat and rye and small animals. At the end of the season, fruit from abandoned orchards is eaten in large quantity. The grain portion is obtained from a deserted barn with some of the 1985 crop still remaining. Potato tubers were probably grown by resettlers on the southern rim of the zone.

**Table 1: Sampling period, estimated age and live weight of Chernobyl boars (n = 37).**

Age group (years)	June 1992	October 1992+1993	February 1993	March 1993	May 1993	August 1993	Live weight range (kg $\pm$ 0.5)
Juveniles (<1)	-	1	2	1	2	-	21.5-50
Yearlings (1-2)	-	-	3	1	1	2	42.5-74
Adults (>2)	5	6	3	1	5	4	66.5-230

Free access to orchards is especially important during the autumn when apples and also pears and plums constitute nearly half of the feed. *Oenothera* now plays a much more prominent role than during the summer; however, the preference has shifted from leaves to roots. Acorns did not appear in the diet during the falls of 1992 and 1993.

The winter sampling session took place during a period that was bare from the beginning, but with some snow at the end. *Oenothera* contributed around half of the diet during the entire winter period, roots (27%) were still important but leaves (21%) were also grazed. During the snow-free period other herbs and grasses were consumed, roots and all. During the snow period, leaves of *Elytrigia* and graminid litter were the second most important forage component. Generally, the diet contained fewer plants and more roots (35%) and insects (13%).

The spring specimens had only 6% roots, and 52% above-ground parts of herbs, including *Taraxacum officinale*, *Sonchus* spp. and *Urtica dioica*. As also during the snow period animals in the diet amounted to 13%.

Table 2 shows that the majority of the specimens were obtained in long fallow land and in deserted settlements.

The Chernobyl boars, at least under climatic conditions that have prevailed so far, have a feeding strategy similar to that found by

Dardaillon (1987) in the Camargue. They also share the habit of opportunism and omnivory with a trend to herbivory with wild boars of the Belgian Ardennes (Palata *et al.*, 1987).

This study also indicated that rooting for below-ground plant parts is pronounced during autumn and winter, but is limited during spring and summer, whereas Genov (1981) found that summer was the main rooting season. His observations on changes to the plant association from grass to herbs on rooted meadows and pastures seem to be very close to what we have observed regarding Wild boar rooting and the occurrence of *Oenothera biennis*, a weed that is known to prefer stirred soils, e.g. on roadsides and arable land.

#### 4. Acknowledgements

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**Table 2. Number of sampled wild boars per season and vegetation type.**

VEGETATION TYPE	SUMMER	AUTUMN	WINTER BARE	WINTER SNOW/COV.	SPRING
Pine, whortleberry-green-mossy			1		
Pine, humid bilberry-mossy	1				
Sedge-reed bog	1		2		
Long fallow non-drained land	3		5	1	2
Long fallow drained land		1	1		1
Abandoned settlements	8		6	2	2

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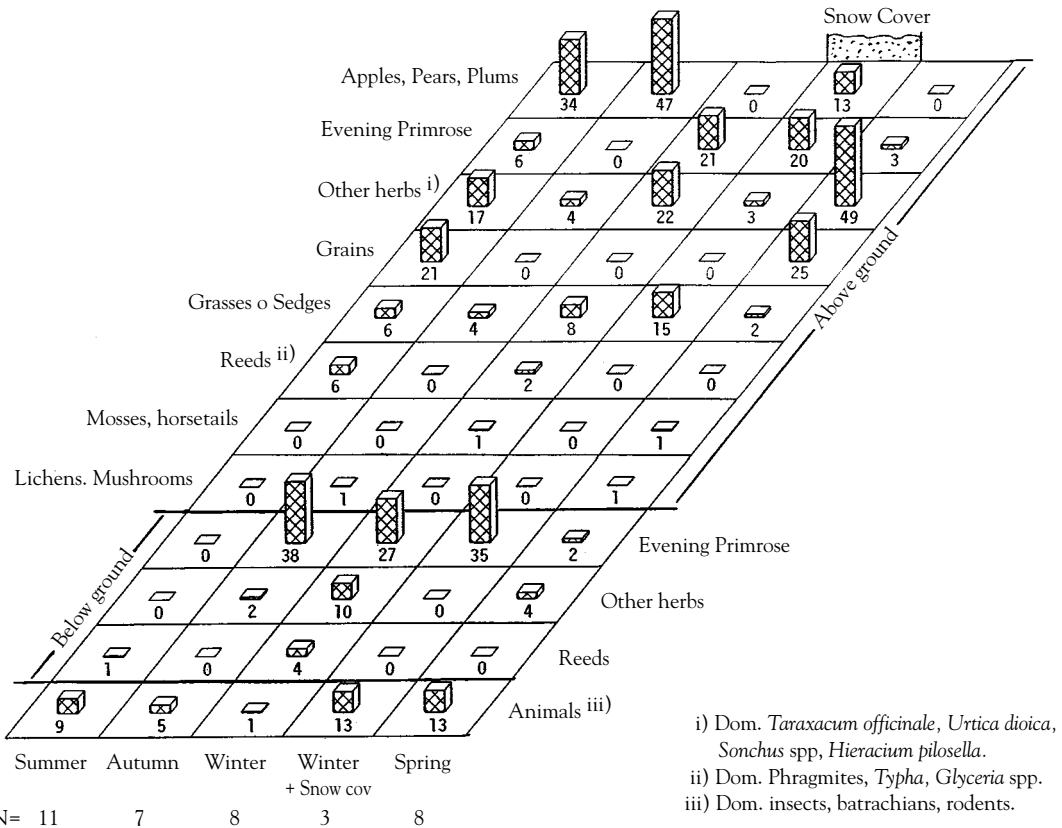


Figure 1 - Stomach contents of wild boars, Chernobyl 1992-1993. N indicates the number of stomach contents. The values on the figure indicate the weight percentages of the various items.