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# CONTENTS OF WILD TURKEY DROPPINGS COLLECTED IN WINTER ON CRAB ORCHARD NATIONAL WILDLIFE REFUGE

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Abstract: Analysis of 307 wild turkey droppings revealed in decreasing order of abundance corn, acorns, loblolly pine nuts, grass and sedge leaves, and milo as significant items in the winter diet. A dependency on corn and an apparent deficiency in hard mast reflected marginal quality of the habitat.

In 1967 introduced wild turkeys (Meleagris gallopavo silvestris Vieillot) became established in low numbers on Crab Orchard National Wildlife Refuge (CONWR), Williamson County, Illinois. Visual and radio-telemetric observations of marked birds indicated a small flock of 5-7 individuals regularly used two roost sites on the west side of CONWR. Birds ranged throughout 32 hectares surrounding the roosts, and most activity was within 0.3 km of roost trees. This winter range was dominated by loblolly pine (Pinus taeda) plantations interspersed with small patches of oak-hickory (Quercus-Carya) woods, goldenrod-sumac (Solidago-Rhus) and cheat grass (Bromus spp) openings, corn (Zea mays) fields and pastures. Roost site-1 was used intermittently from late November, 1972 until mid-January, 1973, and roost site-2 from late January until early March, 1973. Because the Refuge was located on the northern extreme of turkey range in Illinois, an investigation to determine food habits during the critical winter months was initiated.

## METHODS

Droppings, collected in seven sub-samples primarily under roosts in loblolly pine plantations during the winter of 1972-73, were analyzed according to Korschgen (1969). Data were tabulated by aggregate volume (Martin et al., 1946) and adjusted to equal volumes for each sub-sample. Plant nonmenclature was according to Mohlenbrock and Voigt (1959).

## RESULTS

Thirty-five plant species were identified in 307 droppings. In order of decreasing abundance, corn, acorns, loblolly pine nuts, grass and sedge leaves, and milo (Sorghum vulgare) were most numerous food items,

accounting for slightly less than 78 percent of the fecal matter (Table 1). An unharvested corn field 0.1 to 0.3 km from the roost sites and bait piles were the source of corn. Corn was more abundant in early winter sub-samples probably reflected a depletion of this food resource.

Table 1. Ten most numerous (by volume) food items identified in wild turkey droppings (N = 307) collected in the winter of 1972-73, Crab Orchard National Wildlife Refuge, Williamson County, Illinois.

| Rank | Item | Percent Volume |
|---|---|---|
| 1 | Corn (*Zea mays*) | 29.7 |
| 2 | Acorns (*Quercus* spp.) | 20.2 |
| 3 | Loblolly pine nuts (*Pinus taeda*) | 14.0 |
| 4 | Grass (Gramineae) and sedge (Cyperaceae) leaves | 8.7 |
| 5 | Undetermined plant | 5.7 |
| 6 | Milo (*Sorghum vulgare*) | 5.1 |
| 7 | Sumac and poison ivy (*Rhus* spp.) | 2.7 |
| 8 | Grapes (*Vitis* spp.) | 2.0 |
| 9 | Grasses (*Bromus* spp.) | 1.9 |
| 10 | Sedges (*Carex* spp.) | 1.5 |
| | Miscellaneous[1] | 8.4 |
| | | 99.9 |

[1]Other species identified in more than trace volumes were *Lespedeza* spp., *Lonicera japonica*, *Prunus serotina*, *Setaria* spp., *Sassafras albidum*, *Elymus virginicus*, *Rosa multiflora*, *Boehmeria cylindrica*, *Desmodium* spp., *Celtis occidentalis*, *Plantago rugelii*, and *Panicum* spp.

Acorns accounted for the greatest percentage in sub-samples from roost site-2 (Figure 1). Use of acorns increased throughout the winter reflecting either 1) a depletion of the corn resource or 2) increased availability of acorns near roost site-2.

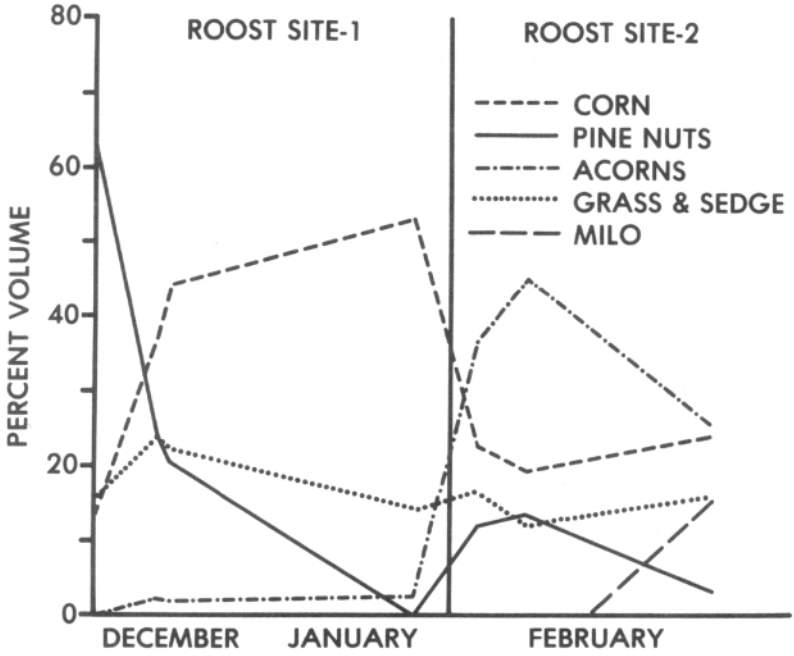


Figure 1. Trends in percent composition by volume of corn, pine nuts, acorns, grasses and sedges and milo in wild turkey droppings, Crab Orchard National Wildlife Refuge, Williamson County, Illinois.

The presence of pine nuts, grasses and sedges in fecal samples throughout winter suggested winter-long accessibility. Thus, pine plantations apparently provided a food resource in addition to suitable roosting cover.

Milo, used as bait for only a short period, accounted for 15.6 percent of the sub-sample collected that period; this established milo 6th in rank (by volume) in the winter-long sample. The rapid increase in use of milo after baiting reflected accessibility and possibly suggested a deficiency in availability of natural foods.

Animal matter, composed almost entirely of stinkbugs (Pentatomidae), accounted for 1.0 percent of the fecal material. Because they were found in every sub-sample, stinkbugs were an important food even though accounting for only a small percentage.

Forty-three other items, found both infrequently and in small amounts, provided the remaining volume.

## DISCUSSION

The most numerous food items found in the present study were similar to those found by Korschgen (1967, p. 170) in a compilation of food-habits data from throughout the eastern United States. Seven of the ten highest ranking species in the Korschgen study were also in the top ten of the present study (Table 2). However, in the range-wide study acorns were the most important accounting for nearly one-half the diet, while in our study they represented only one-fifth and were ranked second (by percent volume). Furthermore, corn was ranked first in our study, accounting for almost one-third of the diet, but only accounted for one-twentieth of the range-wide diet. Apparently, a dependency on corn and a deficiency in available hard mast in our study area reflected poor habitat quality for turkeys.

Table 2. Comparison of the ten most abundant food items used by wild turkeys in the winter as determined by Korschgen (1967, p. 170) and by the present study.

| Food Item | Korschgen Percent Vol. (Rank) | Present Percent Vol. (Rank) |
|---|---|---|
| Acorns (*Quercus* spp.) | 47.1 (1) | 20.2 (2) |
| Grass (Gramineae) and sedge (Cyperaceae) leaves | 14.5 (2) | 8.7 (4) |
| Corn (*Zea mays*) | 4.9 (3) | 29.7 (1) |
| Grapes (*Vitis* spp.) | 4.7 (4) | 2.0 (8) |
| Dogwoods (*Cornus* spp.) | 4.3 (5) | 0.0 |
| Undetermined plant | 4.1 (6) | 5.7 (5) |
| Sumac and poison ivy (*Rhus* spp.) | 2.8 (7) | 2.7 (7) |
| Pteridophyta | 2.8 (8) | T[1] (48) |
| Beech (*Fagus grandifolia*) | 1.6 (9) | 0.0 |
| Sedges (*Carex* spp.) | 1.2(10) | 1.5(10) |
| Pines (*Pinus* spp.) | 0.4(17) | 14.0 (3) |
| Milo (*Sorghum vulgare*) | 0.0 | 5.1 (6) |
| Grasses (*Bromus* spp.) | 0.0 | 1.9 (9) |

[1] Trace

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