

Alternative Feeding Strategies and Potential Disease Transmission in Wisconsin White-Tailed Deer

Abbey K. Thompson^a, Michael D. Samuel^{b,1}, and Timothy R. Van Deelen^c

a Department of Wildlife Ecology, 1630 Linden Drive, University of Wisconsin, Madison, WI 53706, USA

b United States Geological Survey, Wisconsin Cooperative Wildlife Research Unit, 1630 Linden Drive, University of Wisconsin, Madison, WI 53706, USA

c Department of Wildlife Ecology, 1630 Linden Drive, University of Wisconsin, Madison, WI 53706, USA

We conducted experimental feeding using 3 feeding methods (pile, spread, trough) and 2 quantities (rationed, ad libitum) of shelled corn to compare deer activity and behavior with control sites and evaluate potential direct and indirect transmission of infectious disease in white-tailed deer (*Odocoileus virginianus*) in central Wisconsin, USA. Deer use was higher at 2 of the feeding sites than at natural feeding areas ($P \leq 0.02$). Deer spent a higher proportion of time ($P < 0.01$) feeding at pile (49%) and spread (61%) treatments than at natural feeding areas (36%). We found higher deer use for rationed than ad libitum feeding quantities and feeding intensity was greatest at rationed piles and lowest at ad libitum spreads. We also observed closer pairwise distances (≤ 0.3 m) among deer when corn was provided in a trough relative to spread ($P = 0.03$). Supplemental feeding poses risks for both direct and indirect disease transmission due to higher deer concentration and more intensive use relative to control areas. Concentrated feeding and contact among deer at feeding sites can also increase risk for disease transmission. Our results indicated that restrictions on feeding quantity would not mitigate the potential for disease transmission. None of the feeding strategies we evaluated substantially reduced the potential risk for disease transmission and banning supplemental feeding to reduce transmission is warranted.

Keywords: baiting, chronic wasting disease, disease transmission, fecal pellets, *Odocoileus virginianus*, supplemental feeding, white-tailed deer

DOI: 10.2193/2006-543

¹ E-mail: mdsamuel@wisc.edu