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Hairtube sampling for detection and identification of small mammals

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The inconspicuousness and cryptic behavior of small mammals frequently contribute to the relative difficulty in studying this important group. Hairtube sampling is a novel technique offering great potential for the study of small mammals and other species. Hair tube sampling is noninvasive, relatively inexpensive and less labor intensive than traditional live trapping methods. In addition, hair tubes can be left to sample over longer periods of time and a variety of species of different body sizes can potentially be detected in any individual hair collection tube. These qualities have led to increased interest and use of hair tube sampling within the scientific community. However, strength of hairtube sampling is not fully understood.

From June – November (2010), we placed hairtubes (n=265) over two study sites on Mt. Graham located within the Pinaleño Mountains of southeastern Arizona, USA. Tubes were baited with peanuts and peanut butter. Gorilla Tape (Gorilla Glue Company; Cincinnati, Ohio, USA) was used for collecting mammal hair. Tubes were checked once every two weeks for total of 4 checks comprising 15,120 tube nights of effort. At each check, tape and bait were replaced.

Detection of hair increased over time and was collected in >85% of tubes after 28 days in the field. Following 56 days in the field, detection of hair was >90% at both study sites. We have identified 8 individual species from hair collected by hairtubes. We offer data on ability of hairtube sampling to detect multiple species and demonstrate methods used in species identification. Hairtubes appear to have value for the collection of hair and present an easy, cost efficient and potentially effective sampling technique with broad applications for small mammal research.

Hair tube sampling could be an extremely useful tool in wildlife management and conservation but validation of the technique is required before relying on data for management decisions or conservation actions. Our research promises to show efficacy of hairtubes to detect species and the technique's utility within wildlife research.