

Pepper spray: an attractant?

People in brown bear (*Ursus arctos*) country have long sought nonlethal repellants for protection from bear attacks. A liquid spray with the chief irritant in red pepper (oleoresin capsicum) was developed in the 1970s and since then has been commercially manufactured. It is known under the generic name *red pepper spray* and carried by many hikers, campers, and other outdoor enthusiasts. Some states and many national parks recommend that back-country users carry the spray for self defense in encounters with aggressive bears. Al-

though aggressive spraying of the compound has been an effective repellant in encounters with bears, Smith (1998. Attraction of brown bears to red pepper spray deterrent: caveats for use. Wildlife Society Bulletin 26[1]:92-94) demonstrated that bears are attracted to objects with red pepper spray residue.

Smith treated one-square-meter areas of beach gravel in nine locations with four-second bursts of commercially available bear deterrent spray (two different concentrations) and observed the treated areas from blinds at 10-200-m distances. During his observations, 13 independent brown bear groups approached the sites a total of 40 times (seven single bears of unknown sex, three adult boars, one sow with two dependent yearlings, one sow with three cubs of the year, and one sow with two cubs of the year). Interest in the spray of both concentrations ranged from no response (40%) to slight (20%), moderate (12%), and high (28%). None of the bears was ever repelled by the spray residues. Responses included 25 bouts of sniffing, nine pawing bouts, 10 licking bouts, 16 head rubbing bouts, and 11 bouts of bears rolling their entire body on the spray residues. The bouts lasted for 0.1-2.5 minutes.

Smith explains that bears rely on olfaction to locate food. A pungent odor such as that of red pepper spray would therefore be of interest to bears. The relatively high percentage of no response to the spray in Smith's study may be explained by strong winds that carried the scent of the spray away from the location of the

bears. Smith and his field crew had observed bears in the area of the test sites during more than 750 hours and had not seen bears rubbing their heads on the ground, pawing and licking soils, or rolling on their backs as in the red-pepper-spray test sites. He therefore attributed such novel behavior directly to the exposure to red paper spray.

Smith's findings suggest that people should not test spray in hiking or camping areas, should carefully remove all residues from fired canisters, and should not store canisters in sleeping areas. The attraction of bears to red pepper spray warrants prudent use and storage of canisters.