AAV Lead-based Sporting Ammunition and Fishing Tackle

BACKGROUNDER

Supporting Documentation

Lead is an inexpensive substance commonly used in the production of ammunition and fishing tackle. Although it is a naturally occurring element in the environment, lead has no functional role in biological systems and is toxic at very low levels of exposure. At toxic levels in birds, lead causes lethargy, gastrointestinal stasis, anorexia, vomiting, diarrhea, anemia, disturbances of cellular metabolic functions, and neurologic injury leading to blindness, seizures, weakness, and death (Redig et al. 1980, Franson et al. 1983, Custer et al. 1984, Pain et al. 1993). At lower levels, lead exposure causes a number of sublethal effects such as neurological damage, tissue and organ damage, and reproductive impairment (Burger and Gochfeld 2000).

Lead ammunition and fishing tackle exists in a form that can be readily ingested by birds. Exposure to these sources of lead has been a known hazard to water birds (e.g., ducks, swans, and loons) for decades (Grinnell 1894). Upland game birds (e.g., doves and quail) and scavengers (e.g., condors and eagles) have also been shown to be exposed to lead from spent ammunition (Hunt 2006, Cade 2007, Kreager et al. 2008, Green 2008,). Recent studies suggest that more then one-quarter of bald eagles admitted to rehabilitation facilities may have elevated lead levels (Cruz-Martines et al. 2012). Indeed, ingestion of spent ammunition and lost fishing tackle by birds is well-documented, triggering myriad negative effects in individuals and potentially leading to population-level consequences in some species (e.g., waterfowl, eagles, condors, mourning doves, loons, and others) (Green et al. 2008, Rideout 2012). The federally endangered California condor population continues to be at great risk primarily due to exposure to lead from spent ammunition found in offal piles and carcasses of shot game and pest species (Hunt et al. 2006).

Current data for raptors and avian scavengers demonstrate clear positive correlations of lead exposure during hunting seasons (Craighead and Bedrosian 2008). The hazard of ingested lead sinkers and fishing tackle is well-documented in swans and loons, and restrictions on the sale or use of lead weights have been instituted in parts of the UK, Canada, the United States and other countries in order to reduce the impact on these and other vulnerable species. Studies have demonstrated that the ban on the use of lead ammunition for hunting waterfowl and coots in North America has successfully reduced lead exposure in these species and predatory birds (Kramer and Redig 1997). These results suggest that such legislative actions can reduce the risk of toxicity.

From a public health perspective, low levels of lead can cause a number of human health problems, such as neurological injury and abnormal or stunted growth (Needleman et al. 1990). Children are at particular risk. Increases in blood-lead levels in humans have been

positively correlated with consumption of game taken with lead ammunition (Tsuji et al. 2009). Lead ammunition fragments on impact and even if a bullet completely passes through and exits an animal, small amounts of lead are left behind in the in the tissue. These fragments can be absorbed by people consuming the meat without their knowledge (Hunt 2009).

Many effective non-lead alternatives to toxic, lead-based ammunition and fishing tackle have been approved and are currently available. Several companies have developed non-lead ammunition that can be used safely in all varieties of rifles and shotguns for both hunting and target shooting. Firearm experts have confirmed that only minor adjustments in technique are typically required for successful use of non-lead hunting and target ammunition. However, the widespread manufacture and use of this ammunition depends on assured markets supported by regulation and enforcement.

The policy of Association of Avian Veterinarians in regard to lead in ammunition and fishing tackle is to:

1. Recognize that lead is a potent toxin to wild birds that can have individual- and population-level effects.

2. Advocate the replacement of lead-based sporting ammunition and fishing tackle with non-lead products, while recognizing that the removal of lead for hunting, fishing, and shooting sports will require collaboration among all affected stakeholders.

3. Support responsible means to reduce, if not eliminate completely, as specifically as possible, avian exposure to lead-based ammunition and fishing tackle.

References

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