EXECUTIVE SUMMARY OF PROPOSED 2019 UPDATES TO THE AVMA GUIDELINES FOR THE EUTHANASIA OF ANIMALS

Below is a summary of the most notable 2019 updates to the AVMA Guidelines for the Euthanasia of Animals. A complete DRAFT of the document with all proposed changes indicated is available for your review and comment.

Section I INTRODUCTION AND GENERAL COMMENTS

A new Subsection, "I5.6 Sedation vs. Anesthesia", is proposed. This Subsection clarifies the distinction between sedation and anesthesia. Specifically, animals under sedation may be aroused to a conscious state with sufficient stimulation. Recognizing this is critical when categorizing the effects of agents and distinguishing even deep states of sedation from unconsciousness.

Section S.2 LABORATORY ANIMALS

In Subsection "S2.2.2.1 Inhaled agents," under "S2.2 Small Laboratory and Wild-Caught Rodents (mice, rats, hamsters, guinea pigs, gerbils, degus, cotton rats)," a change in CO_2 flow rate is proposed. There has been considerable research conducted on the use of inhaled agents for the euthanasia of rats and mice in the laboratory. Based on this information the flow rate for CO_2 euthanasia systems recommended for use with small rodents in the laboratory has been amended from 10-30% to 30%-70% of the chamber or cage volume/min. This recommendation is made with the understanding that there is potential for increased distress due to dyspnea at lower flow rates or mucous membrane pain associated with flow rates at the higher end of this range. This change is also carried into the Methods portion of the document.

In Subsection "S.2.4 Laboratory Rabbits," several changes are proposed. First, under "S2.4.3.1 Inhaled Agents", the use of CO_2 has been added as an Acceptable with Conditions method. Based on recent research, the recommended CO_2 displacement rate for rabbits is 50-60% of the chamber or cage volume/min. Next, under "S2.4.3.2 Physical Methods," cervical dislocation has been better described and the penetrating and non-penetrating captive bolt techniques are now classified as Acceptable with Conditions methods. These changes are based on recent research and are consistent with guidance provided within the AVMA Guidelines for the Humane Slaughter of Animals.

Section S.3 ANIMALS FARMED FOR FOOD AND FIBER

There are several changes proposed for this section. First is a change in Subsection Title from "S3.2.1 Cattle" to "S3.2.1 Bovids". This is the first indication reflecting expansion of this Subsection to include not only cattle, but also American bison and water buffalo. Additionally, the description of appropriate captive bolt technique in cattle has been updated to be consistent with recent research findings and guidance provided within the AVMA Guidelines for the Humane Slaughter of Animals.

Next, a title change for Subsection, “S3.2.2 Sheep and Goats” is proposed to “S3.2.2 Small Ruminants” to reflect the addition of information regarding camelids and farmed cervids. The use of the puntilla method of killing in camelids is now noted as Unacceptable.

A new subsection, “S3.2.2.1.1 Inhaled Agents” is proposed. This section details the use of carbon dioxide as an Acceptable with Conditions method of euthanasia for goat kids. Further, under “S3.2.2.2.2 Physical Methods”, there are several updates regarding captive bolt and gunshot technique for both adults and neonatal sheep and goats. These changes make the document consistent with its counterpart, the AVMA Guidelines for the Humane Slaughter of Animals and recently published research.

Section S.4 EQUIDS

In Subsection “S4.2.3 Adjunctive Methods”, the following methods are acceptable for use once the animal is in a surgical plane of anesthesia: saturated solution of potassium chloride injected IV or intracardiac; saturated solution of magnesium sulfate injected IV; or lidocaine injected intrathecally. These methods may play a larger role in equid euthanasia in the future as remains contaminated with barbiturates are no longer accepted by many rendering companies or landfill sites.

Section S.5 AVIAN

In Subsection “S5.3 Eggs, Embryos, and Neonates”, a change is recommended based on the potential for perception of pain and consciousness in embryonated eggs. Recent research has become available to guide recommendations on when embryonated eggs may experience suffering when exposed to euthanasia methods designed for pipped eggs, and these methods should be replaced by methods suitable for neonates. As a result, the recommendation for when avian embryos achieve the potential for perception has been amended from 50% to 80% of incubation for all avian eggs. This recommendation should be applied across avians with consideration for species-specific differences in development and using the best available data.

Section S6 FISH AND AQUATIC INVERTEBRATES

In Subsection “S6.2.3 Adjunctive Methods”, Exsanguination has been added as a secondary or adjunctive method to decapitation, pithing, or other methods that effectively destroy brain function. Freezing has been removed.

In Subsection “S6.3 Aquatic Invertebrates”, further detail has been added regarding the proper use of magnesium salts or ethanol for the euthanasia of aquatic invertebrates.