Summary

The work at hand will allow a general view of legislation, procedures and stress components of air transportation of animals. Precise research about the significance of stress components during air transportation of animals is only available to a limited extent.

The Live Animals Regulations, yearly issued by the International Air Transport Association, are part of german legislation as well as of several other nations. Worldwide standards facilitate transportation to different countries which may include different carriers. The amount of air transportation in Germany is increasing. Each year millions of animals are transported to and from Germany by air. Lufthansa aircraft suitable for animal transportation are introduced. The individual steps of the transportation chain at the airport Frankfurt/Main are exemplified. Optimizing loading density and environmental condition during air transportation are of major importance. Required loading densities and respective containers are presented from the Live Animals Regulations, a procedure by Airbus Industrie concerning loading and climate is shown. Atmospheric environment during flight time and technical systems of pressurization and air conditioning are explained to make the particular stress components of air transportation understandable. Besides climatic stress elements as atmospheric pressure, temperature, humidity and ventilation stressors of acoustic and mechanical nature are of importance. Cabin altitude during normal flight operation has shown no impact on animals. Most of the time the air conditioning system is able to control environmental conditions during flight time but may not be sufficient during ground operation. The strain through vibration, noise and jet lag is described. Their impact on animals is unknown.

The present study shows that transporting animals by air is of minor public interest. This is surely the result of IATA-legislation, short periods of transportation and low mortality rates. Nevertheless further information about the significance of stress elements of the air transport compared to road transportation and the impact of air transportation on future health and development of different species is required.