D-20 Use of quinaldine sulphate as an anaesthetic agent for young koi carp, *Cyprinus carpio*

S P S D Senadheera, Mangalika Hettiarachchi
(*Dept. of Zoology, Univ. of Kelaniya*)

Quinaldine sulphate was tested as an anaesthetic for young koi carp, *Cyprinus carpio* in the simulated packaging for air transport. Koi carps (7.5 - 9.5 cm total length) were placed in polyethylene bags, ¼ full of water to which a known concentration of buffered quinaldine sulphate was added. The rest of the space in the bags was filled with oxygen. The sealed bags were then kept in styrofoam boxes for 40 h at room temperature (28.05 ± 0.28°C). The rate of oxygen consumption of carps and the amount of total ammonia and carbon dioxide accumulated in transport water were measured. Mortalities of fish during packaging (40 h) and post-packaging (5 days) periods were recorded.

Quinaldine sulphate significantly reduced the rate of oxygen consumption and the accumulation of ammonia and carbon dioxide in transport water. The effective concentration when defined as the one giving the greatest reduction of accumulation of ammonia and carbon dioxide and the rate of oxygen

consumption while giving the least stress to the fish was found to be 50 ppm quinaldine sulphate having less than 5 min induction and recovery times.

Young koi carps anaesthetized with 50 ppm quinaldine sulphate at the density of 40% (fish body weight to water ratio) did not have mortality during packaging or post-packaging periods, while unanaesthetized fish at the same density suffered 100% mortality at the end of the packaging period. The study shows that young koi carps could be transported at high densities, using quinaldine sulphate as an anaesthetic which will maximize the effective utilization of space and weight during transportation.