REVIEW

Vaccination against Spring Viraemia of Carp (SVC) - from the past till the future

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Abstract
In the period between 1970 and 1985 it was shown that injection of killed or attenuated virus was effective in preventing spring viraemia of carp (SVC) provided that the fish were vaccinated at optimal temperatures (≥ 18°C). Unfortunately, this approach was difficult to apply in traditional pond farming, where stocking often takes place in spring and autumn at temperatures far below 18°C. In recent years new and promising DNA vaccines (containing a glycoprotein of the SVC virus) have been developed, including a formulation that can be injected or given by oral route (feeding). These developments open new possibilities for protection of young fish and/or vaccination at optimal temperatures giving durable protection in traditional pond farming of carp.

Introduction

Pond fish breeding has a centuries-old tradition in Europe (Hoffmann, 1995) and Asia. The species composition of cultured fishes has changed over the centuries and evolved depending on public demand and improvement of rearing methods. The fisheries itself has also experienced periods of rise and fall. In the traditional pond breeding, a single fish species – common carp (*Cyprinus carpio* L.) - gradually began to play a dominant role. This was due to a number of advantages. Carp are able to use the natural food resources in ponds and under natural climate conditions they achieve better weight gains than other species. At the same time, carp are characterised by high tolerance to unfavorable environmental and rearing conditions. As a result, the proportion of carp in the pond species composition has exceeded 90%. In other words: carp has become the dominant species in freshwater fish production in Central and Eastern Europe. Unfortunately, carp turned out to be sensitive to particular pathogens.

In the 1960s and 1970s, a significant problem was caused by a disease that eventually was named Spring Viraemia of Carp (SVC). In 1971 a viral agent, *Rhabdovirus carpio*, could be identified and SVC is further described in several publications during the 1970s (Fijan et al., 1971; Tesarcik et al., 1977; Ahne and Wolf, 1977; Kölbl and Kainz, 1977). Subsequently, studies on prophylaxis and therapy of SVC were initiated.

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