

Sleeping Disease Syndrome of Trout

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Description of Disease

Sleeping disease syndrome (SD) is a contagious disease of freshwater farmed fish caused by Sleeping Disease Virus (SDV). SD occurs mainly in rainbow trout, but brown trout and lake trout are also susceptible. The syndrome has many similarities to pancreas disease, a serious condition of farmed Atlantic salmon, caused by salmon pancreas disease virus (SPDV). Recent studies have shown that SDV and SPDV are in fact the same virus, and it has been suggested that a single common name, *Salmonid alphavirus*, be used in future. SD has been observed in France for many years, with 30% of farms in Brittany estimated to be affected. In contrast, the United Kingdom was considered to be free of SD until June 2002, when two outbreaks in rainbow trout were reported in England and Scotland. All ages are susceptible to infection, but the condition is most serious in fingerlings (10-15g), where losses can reach 50%. Older fish may be infected without showing any clinical signs. Natural outbreaks appear almost exclusively when water temperatures are around 10°C. This may reflect the ability of SDV to grow better in fish at this

temperature combined with the reduced efficiency of the immune system of fish at lower temperatures. There is no evidence to date that surviving fish become long term carriers of SDV.

Clinical Signs

SD is characterized by a very particular "sleeping" behaviour with some of the fish in the affected group resting on their sides at the bottom of the tank. Following infection, SDV initially targets the pancreas and the heart. In the later stages of infection, skeletal muscle is also damaged, and it is the inability of some fish to swim due to this muscle damage that is considered to cause this behaviour.

Post-Mortem Findings

There are no characteristic gross post-mortem findings for SD. On microscopic examination, characteristic changes in the pancreas and heart are most evident in the first two weeks after infection, with changes in skeletal muscle becoming most evident from three weeks onwards, by which time the changes in the pancreas and heart are beginning to heal.

Diagnosis

A presumptive diagnosis may be based on the clinical signs. However, laboratory examination, based on microscopic examination of tissues, virus isolation or detection of antibodies in blood samples is necessary to make a definitive diagnosis. Improved diagnostic tests are currently under development.

Treatment, Prevention and Control

In common with other viral conditions, there are no medicines available for the treatment of SD. Efforts should be directed at minimizing losses by providing the best possible environment for affected fish.

Infection may be introduced directly through infected fish, but also indirectly by contaminated vehicles, personnel and equipment. Care should therefore be taken when sourcing fish, both in relation to the farm of origin and the transportation used. If use of site-specific equipment is not practicable, all additional equipment should be thoroughly cleansed and disinfected before use. Where salmonid fish are brought onto farms sites for processing, such facilities should ideally be located as far as possible from fish ponds and tanks. Processing waste, including water, should be disposed of safely.

Any unusual mortalities should be investigated by an appropriate laboratory. Where outbreaks have occurred, thorough cleansing and disinfection of ponds, sterilisation of equipment and restocking with fish known to be free from the virus are advisable.

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