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PMCV and PRV occurrence in wild and farmed fish in Denmark

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Abstract:

Every year salmon are restocked in the 7 rivers Storå, Skjern Å, Varde Å, Sneum Å, Kongeå, Ribe Å and Gudenåen.

Six-month-old and 1-year-old salmon for about 2 mio. Kr (€268000) are restocked every year. The salmon are restocked in both the main rivers as well as the larger inlets. 6-month-old salmon are restocked in smaller rivers where the spawning and growth is ideal. They are released from a boat drifting downstream between September and October.

1-year-old smolt are restocked in a few places in the main rivers in April. They are restocked in large numbers to provide better protection against birds and other predators.

In 2007 more than 200000 6-month-old and 1-year-old salmon were restocked in the west-facing rivers. At first Irish, Scottish and Swedish wild salmon were used for restocking, but in 2001 it was discovered that there were still original populations in the rivers and since then all the broodstock have been genetically tested and now only broodstock from the original populations in western Denmark are being used.

The broodstock are caught by electrofishing in a collaboration between local sports fisheries organizations and the Danish Center for Wild Salmon, DCV and used for breeding at the premises of DCV close to the towns of Skjern and Randers, respectively. Before being selected for breeding the broodstock are tested for an array of pathogens, including ISA, VHSV, IHNV, IPNV and BKD.

Piscine Reovirus (PRV) is a double-stranded non-enveloped RNA-virus in the family of Reoviridae, while Piscine myocarditis virus (PMCV) is a double-stranded RNA virus of the Totiviridae family. Wild and farmed salmon and trout have not been tested for PRV or PMCV in Denmark before, but both viruses are found in Norway, where they are suspected of causing Heart and Skeletal Muscle Inflammation (HSMI) and Cardiomyopathy Syndrome (CMS), respectively.

In 2013, broodstock from four different rivers in Denmark were received for surveillance. These rivers are Ribe, Varde, Skjern and Store Å, which are all west-facing rivers. Of these fish 8 were Sea Trout and the rest Salmon. 184 fish were tested by real-time RT-PCR for PRV and 30 fish from each river were tested by real-time RT-PCR for PMCV. This is the first time wild and farmed fish have been tested for either virus in Denmark.