

INTRODUCTION

At the Platte River State Fish Hatchery in Michigan, coho salmon (*Oncorhynchus kisutch*) production yearlings frequently experience significant mortalities (10% to 20%) overwinter and prior to spring plantout. Often the mortalities are associated with external lesions of coldwater disease (*Cytophaga psychrophila*) and anemia. Rich Holt, Department of Microbiology, Oregon State University, Corvallis (personal communication), reports a similar phenomenon in Oregon that he feels is directly correlated with the presence of viral erythrocytic necrosis (VEN). Steve Leek (1987) reported a similar condition in chinook salmon (*Oncorhynchus tshawytscha*) at the Little White Salmon Hatchery in Cook, Washington. Preliminary examinations of peripheral blood smears from Platte River coho indicated that a VEN-like inclusion body was present in the red blood cells of these fish.

The study (over three rearing cycles) was intended to determine: (1) if VEN is present in coho reared in Michigan, (2) if there is a peak incidence period for VEN, (3) if the incidence varies with diet, and (4) if VEN is associated with periods of significant mortality.

METHODS

The study was conducted using three rearing cycles (1984-85, 1985-86, and 1986-87) of coho collected and reared to smoltification at the Platte River Hatchery.

Fish samples varied during the study of the three cycles. During the first part of the study (1984-85), 100 randomly selected "healthy" yearling fish from each of two diet groups, Oregon moist pellets (OMP) and low phosphorus dry diet, were tested in March 1985. During the second part of the study (1985-86), 72 randomly selected "healthy" fish from each of two diets (OMP and a modified low phosphorus dry diet) were tested on five dates between June 1985 and March 1986. In addition, another group of sick and moribund fish was tested in March 1986. During the last part of the study (1986-87), 100 fish were selected, 72 "healthy", and 28 sick or moribund from the OMP diet, and tested in March 1987.

The laboratory tests for VEN remained the same for all years: the fish were anesthetized with MS-222 and then one heparinized microhematocrit tube (1 mm I.D.) of blood was taken. One blood film was prepared from each fish using a drop of blood from the tube. These blood films were air-dried for 30 minutes, then fixed in methanol for 5 minutes. Blood films were stained with Giemsa or pinacyanol chloride (Leek 1987) and examined under oil immersion for inclusion bodies in red blood cells. Microhematocrit tubes were centrifuged 5 minutes in a microhematocrit centrifuge to determine hematocrit levels.