

Fish Health Certification in WV

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Why is FHC necessary?

- Federal and state regulations re transport of live salmonid fish



Fish health management plan for disease prevention and control

- Causes of disease-related financial losses
 - Direct (mortality, facility closure, restriction of movement, inability to replace stock)
 - Market losses (reduced quality of survivors, damage to reputation, missed markets)
 - Opportunity costs (diversion of management and labor, underutilization of facility) (Paterson et al., 1991)
- ISA in Maine, SVC in NC, LMBV in South

Certifiable pathogens

- Known to be in northeast U.S.
 - *Aeromonas salmonicida* (Furunculosis)
 - IPNV (Infectious pancreatic necrosis virus)
 - *Myxobolus cerebralis* (Whirling disease)
 - *Renibacterium salmoninarum* (Bacterial kidney disease)
 - *Yersinia ruckeri* (Enteric redmouth)
- Not known to be in northeast U.S.
 - IHNV (Infectious hematopoietic necrosis virus)
 - VHSV (Viral hemorrhagic septicemia virus)



Characteristics participating farms

Number	Yr. 1 – 15 (6 private, 9 state) Yr. 2 – 15 (8 private, 7 state)
Species	Rainbow, brook, brown & golden trout, Arctic char (from egg stage)
Production	>75% for fee fishing; total production about 1 million lbs.
Water supply	Spring water; spring water combined with river water; spring water runs above ground or collects in pond before entering rearing units
Egg Source	Trout Lodge, WA; Canada; Black Canyon, ID; Own broodstock; WV facility

Results for Certifiable Pathogens

Pathogen (Disease)	Positive in 2001	Positive in 2002
IPNV (Infectious Pancreatic Necrosis)	1/15	2/15
<i>Aeromonas salmonicida</i> (Furunculosis)	2/15	2/15
<i>Myxobolus cerebralis</i> (Whirling Disease)	2/8	1/8
<i>R. salmoninarum</i> (Bacterial Kidney Disease)	2/15	0/15
<i>Y. Ruckeri</i> (Enteric Redmouth)	0/15	0/15
IHNV (Infectious Hematopoietic Necrosis)	0/15	0/15
VHSV (Viral Hemorrhagic Septicemia)	0/15	0/15

Risk factors for positive farms

- IPNV – transfer of fish from another facility
- *Myxobolus* – dirt ponds
- *Aeromonas salmonicida* - unknown, possibly through bird feces at one farm

Management changes Yr 1 to Yr 2

- Refusal to bring in any uncertified fish from any facility (including non-salmonids)
- Barriers between production areas and fee fishing areas
- Changes in hauling tank disinfection
- Increased consciousness about biosecurity

Additional Comments

- Two producers shipped to states requiring certification and were not asked for paperwork
- Need help finding out-of-state customers

Conclusions

- Some certifiable pathogens that are known to be present in the northeastern U.S. are also at WV trout facilities, but at low prevalence in the industry
 - IPNV
 - *Aeromonas salmonicida* (furunculosis)
 - *Myxobolus cerebralis* (whirling disease)
- Exception – *Yersinia ruckeri* (enteric redmouth disease)

Conclusions (cont.)

- Farms were negative for viruses thought to be limited to the western U.S. – IHNV and VHSV
- Education of the buyer is as important as education of the farmer

Conclusions (cont.)

- Opportunity for the WV aquaculture industry
 - Implement a state-wide biosecurity and fish health management program
 - Protect industry and wild fisheries from known and emerging pathogens
 - Control and prevention of production-related diseases (gill disease, coldwater disease, skin and gill parasites)
 - Marketing advantage as industry develops reputation for healthy fish raised in biosecure conditions