

# Vaccination and Fungus



## IP Vaccination = Fungus?

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It appears that since the arrival of oil-based vaccines there has been an increase in the occurrence of fungus in hatcheries post vaccination (I will leave the reasons why to the veterinarians). It has led to severe losses in some cases and has been more of a nuisance in others. The following are a few techniques that I have used and suggested to combat this pesky problem.

- Only vaccinate healthy fish. I also recommend not to vaccinate smolts in fresh water; parr only. The scales are too soft and the smolts are already under stress. The results could be disastrous.
- Pre-treat the fish to be vaccinated with a 1:8000 formalin bath the day prior to vaccination.
- Make sure that the anesthetic bath is buffered as close to the actual pH of the hatchery water as possible. An acidic bath will take the mucous off the fish and fungus will surely be a problem. You can use sodium bicarbonate to buffer the anesthetic. Never mix Tricaine methanesulfonate (MS222, TMS) powder with the sodium bicarbonate powder; add at different times to the anesthetic bath! Exchange the bath frequently.
- Add Vidalife to the anesthetic bath - recommended dose is 66 ppm or 1 ml per 15 liters as per Syndel Laboratories. Some facilities spray Vidalife right on the vaccination table. This product acts like a band aid or it helps to protect the mucous coat from damage during handling.
- Add salt to the anesthetic bath - 10 ppt. This step is optional. The salt will help rid the skin of excess mucous containing foreign material and organisms. Salt will also provide the fish with needed ions, as well as providing relief from some of the stress on the gills.
- Use Defoam FG-10 in the anesthetic bath. The recommended dose is 10 - 100 ppm - as per Syndel Laboratories. The lack of foam will enable you to view the fish and remove them from the bath at the proper time.
- When placing the fish into the anesthetic bath only use a knotless dip net and place just enough fish for the vaccinators to do in a few minutes. Large dip net loads will do more harm than good!
- Vaccinate enough fish to fill the rearing tank in one day, two days maximum. Any longer than that the fungus will have had a chance to infect the fish before the protocol has been commenced. If this cannot be done I would consider using a salt bath after day two and immediately commencing the protocol after the required number of fish has been reached.
- Start the post vaccination protocol. I prefer to do a series of formalin (Parasite-S) baths. The first bath is done at 1:8000 dilution the very next day following vaccination. This is followed by two days at 1:6000; skip one day and repeat the program. The protocol takes a total of seven days with six of them using the formalin bath. Salt baths can also be used instead of the formalin. The usual concentration ranges from 10-15 ppt. When using formalin or salt monitor the oxygen levels in the rearing tank at all times.

### Update

A hatchery that used this protocol reported post - vaccination losses due to fungus of 0.05%. Without using this protocol their post- vaccination losses due to fungus were 12.7%.

I hope the above helps but as with any treatment protocol, experiment with a few fish before implementing any suggestions or remedies on a large scale.

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