

# Impacts of Common Therapeutants in the Pond Ecosystems and on the Physiology of Fish

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# Watching the Bottomline

There isn't a magic bullet !

# Watching the Bottomline

An ounce of prevention is worth a TON of  
cure

# Watching the Bottomline

Treatment is almost never cost effective  
compared to prevention

# Keys to Disease Prevention

- Disease free, conditioned stock
- Water Quality
- Pond Rotation
- Isolation

# Watching the Bottomline

All drugs are not created equal

# Keys to Appropriate Drug Use

- Accurate Diagnosis
- Correct Dose
- Proper Duration of Therapy
- Functional Route of Delivery

# Focus of Talk

Antibiotics

Approved for Food Fish



# Key Facts

- Antibiotics are only effective against bacterial infections and to a lesser degree some protozoal infections
- All antibiotics cause some negative physiologic impacts on the animal being treated

# The Case For Caution

- Withdrawl Times and Harvest
- Ridding the ponds of contamination
- Creating drug resistant bacteria

# Sulfadimethoxine

QuickTime™ and a  
TIFF (Uncompressed) decompressor  
are needed to see this picture.

# Sulfadimethoxine

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Inhibits Folic Acid Synthesis

Aplastic Anemia

Hemolytic Anemia

Hypersensitivity

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# Ormetiprim

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Inhibits Folic Acid Synthesis by another route

Anemias, Coagulation Disorders

Dermatitides

Renal Impairment



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# Sulfadimethoxine and Ormetiprim

- Half life in freshwater greater than 1 year
- Apparent Half life is shorter when water becomes cold, but the drug is still there and returns when the water re-heats.

# Oxytetracycline

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# Oxytetracycline

Inhibits bacterial protein synthesis

GI Distress

Photosensitivity

Hepatotoxicity

Renal Toxicity

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# Oxytetracycline

- Half life in fresh water longer with acid water (pH 3 ~ 42 days)
- Half life prolonged in cold water (4°C ~ 77 days)
- Half life decreased with exposure to light, increased temperature, exposure to organics.