The benefits of practical biosecurity

Michael Pritchard MBT August 2018
Pathogens

Bacteria Viruses and Fungi
What diseases?

Gill associated virus disease
Infectious hypodermal and haematopoietic necrosis
White Spot
Yellow Head
Taura Syndrome
Salmonellae
E.coli
Listeria
And many more
Why it’s more important to disinfect against viruses than bacteria

**FREQUENCY**
- Common
- Not easily detected
- Often undiagnosed
- On farm persistence

**IMPACT**
- Primary viral infections often cause secondary bacterial diseases
- Often subclinical
- Complex syndromes
- Ongoing performance losses

**CONTROL**
- Difficult to control
- Easily spread
- Untreatable with antibiotics
- Vaccination not always successful
According to Suisse-RE, a major agricultural crop insurer, the average insurance loss ratio for aquaculture over the period 1992-2012 was 65% and disease accounts for 20% of total losses in the relatively well managed salmon farming industry.

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Mortality
• Loss of prawns to market
Reduction of productivity
• Poor FCR
• Loss of liveweight
• Loss of prawn numbers
• Poor prawn quality
• Poor variable size
• Variable colour

Processing losses
• Downgrading

Cost of disease prevention and treatment
• Medication
• Vaccination
• Cleansing and disinfection
• Ongoing biosecurity
• Disease monitoring
• Serology, etc
How long can these disease pathogens hang about?
Survival of Pathogens on various surfaces

- Skin: <4 hrs
- Ear: 4 hrs
- Nose: 1 day
- Hair: 3 days

- Wood: 1 day
- Rubber: 2 days
- Feed: 4 hrs

Study by J-P. Vaillancourt, 2000
What can we do that is practical?
Understand how do diseases spread?
Which is the more likely disease spreader?
Complex web of interrelationships

- Hatchery – Buildings/Equipment/Staff handling
  - Prawns to Hatchery – staff handling/equipment/transport vehicles
  - Farm preparation: Pond Hygiene, Water preparation, Equipment Hygiene
  - Feed and Feed supply vehicles
  - Water
  - Maintenance teams
  - Wild Birds/Fomites
- People
  - Boots
  - Clothing Handling
- Transport - crates and trucks to processor factory
- Cleanout Teams

Fresh by Design
Alltech
Oceania Group
What can we do that is practical?

- Say NO to visitors entering the farm
- Have a gate and keep it closed
- Keep parking of vehicles outside the gate
- Meet “off farm” with suppliers, sales personnel
- Have a gatehouse with a visitors book
- Do not let people on site if they have been visiting other farms
- Do no overlook maintenance personnel such as electricians, plumbers.
- Have a rodent control program
- Train your staff in the principles of biosecurity
Have a plan – An accepted by all routine movement plan

CONSIDER
- Younger to older
- Harvesting
- Inputs –feed
- Mortality removal

IN

OUT
Ebb and Flow

Do you know your neighbours?
Who is pumping and what are they pumping?

In or Out?
What else can we do?

• Keep all your equipment clean and use a quality disinfectant.
• Ensure what you use to disinfect is APVMA registered for Aquaculture.
• Ensure what you are using kills the diseases you are preventing.
Protective Gear

Ideal would be wash and disinfect BETWEEN farms

Always wash and disinfect
At the end of the shift
The Collection Bins / Crates
Trucks

✓ Vehicles cleaning and disinfection

Avoid recontaminating disinfectected vehicles.

Clean vehicles:
- Must not use the same route as soiled vehicles.
- Must be parked far from soiled vehicles.
- Must remain inaccessible to animals.

SOILED VEHICLE PARKING → PREVAILING WINDS → CLEAN VEHICLE PARKING
Equipment segregation

By area by colour by risk
Equipment segregation

By area by colour by risk
Footwear

Ideal would be wash and disinfect BETWEEN farms

Always wash and disinfect At the end of the shift
Hang things up, safe, clean, easy to find
Keep ALL Equipment Clean and Disinfected

Biosecurity Task

- Routine disinfection of all pre-cleaned surfaces, earth, wood, & concrete
- Routine disinfection of tools & equipment (including, buckets, nets, aeration paddles etc.)
- Boot dips & vehicle tyre dips
- Boat and vehicle disinfection
Virkon Aquatic is the heart of biosecurity

Reducing Pathogen Pressure – use during production
Thanks for your time and interest