
Fish Vaccination
From Development to Field Application
Fish Health
Virbac

# Between Lab science and Field practice

**Lab Parameters:**

- RPS (%) – T0/T6/T12..T60 etc...
- Survival (%)
- DOI (duration of immunity)
- Antibodies onset etc…

**Field Parameters:**

- Survival/Mortality (%)
- FCR, ADG, SGR
- Farming time
- Size distribution
- Margins and/or loss (Economical assay)
- Price impact

# EPIDEMIOLOGY STUDIES - What we need to understand from the field?

- **Mortality rate and clinical signs** →
  - Vet Clinical Visit
  - Samples & Diagnosis

- **Economic impact on production** →
  - Loss (%)
  - Loss on Harvest (market value)

- **Timing of outbreaks** →
  - Dry/Rainy Season (or in between)
  - Upwelling/Oxygen lack etc…

- **What farmers do for fight the mortality** →
  - Antibiotic treatment
  - Early harvest or no farming in specific period (?)

# EPIDEMIOLOGY STUDIES – *Results and observations*

*Primary Pathogens*

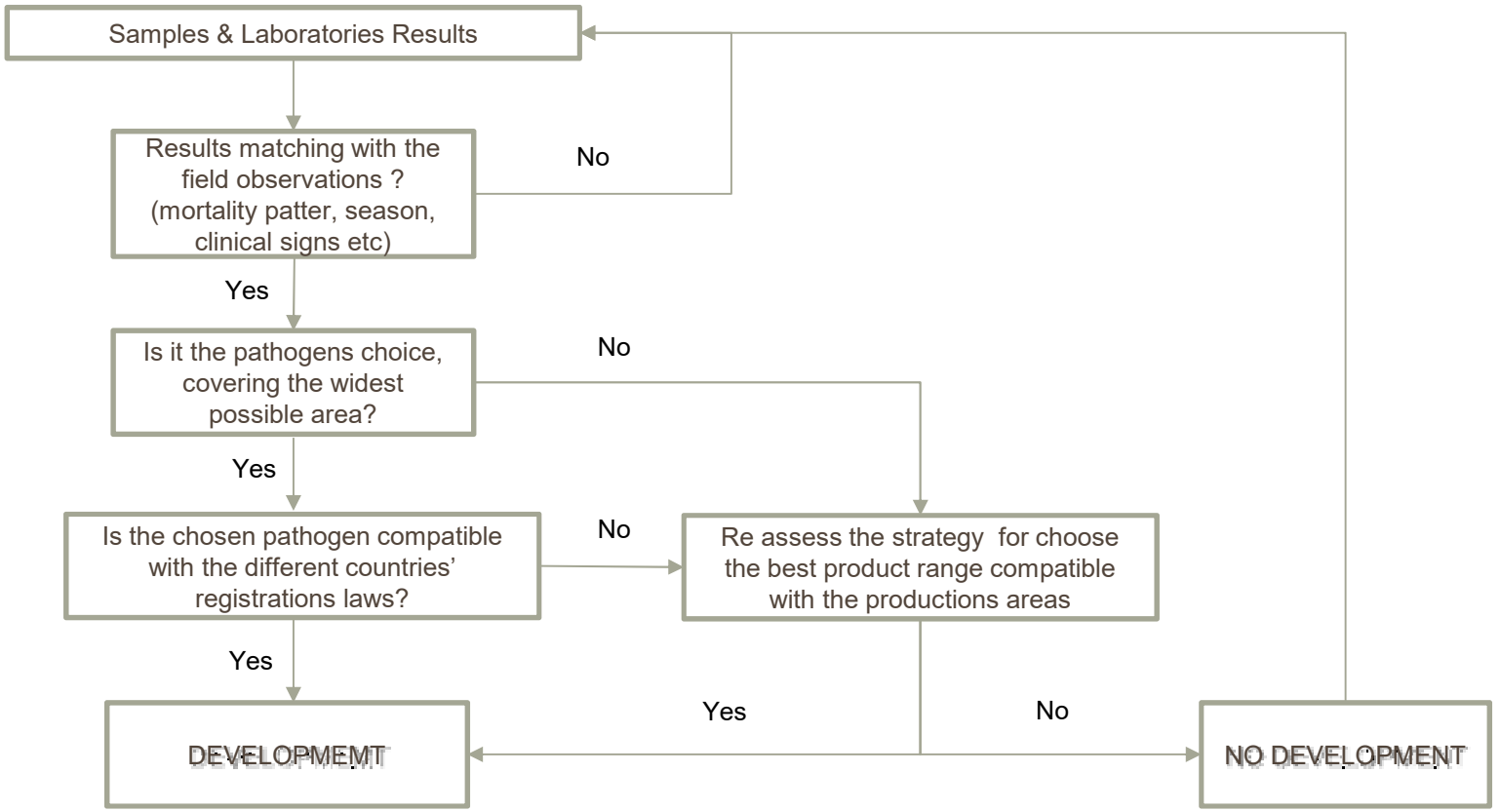
*Streptococcus agalactiae*, serotype, Ia, Ib and III

*TiLV, Iridovirus*

Secondary pathogens (?)

- *Streptococcus iniae (?)*
- *Aeromonas spp*
- *Columnaris*
- *Vibrio spp*
- *Etc…*

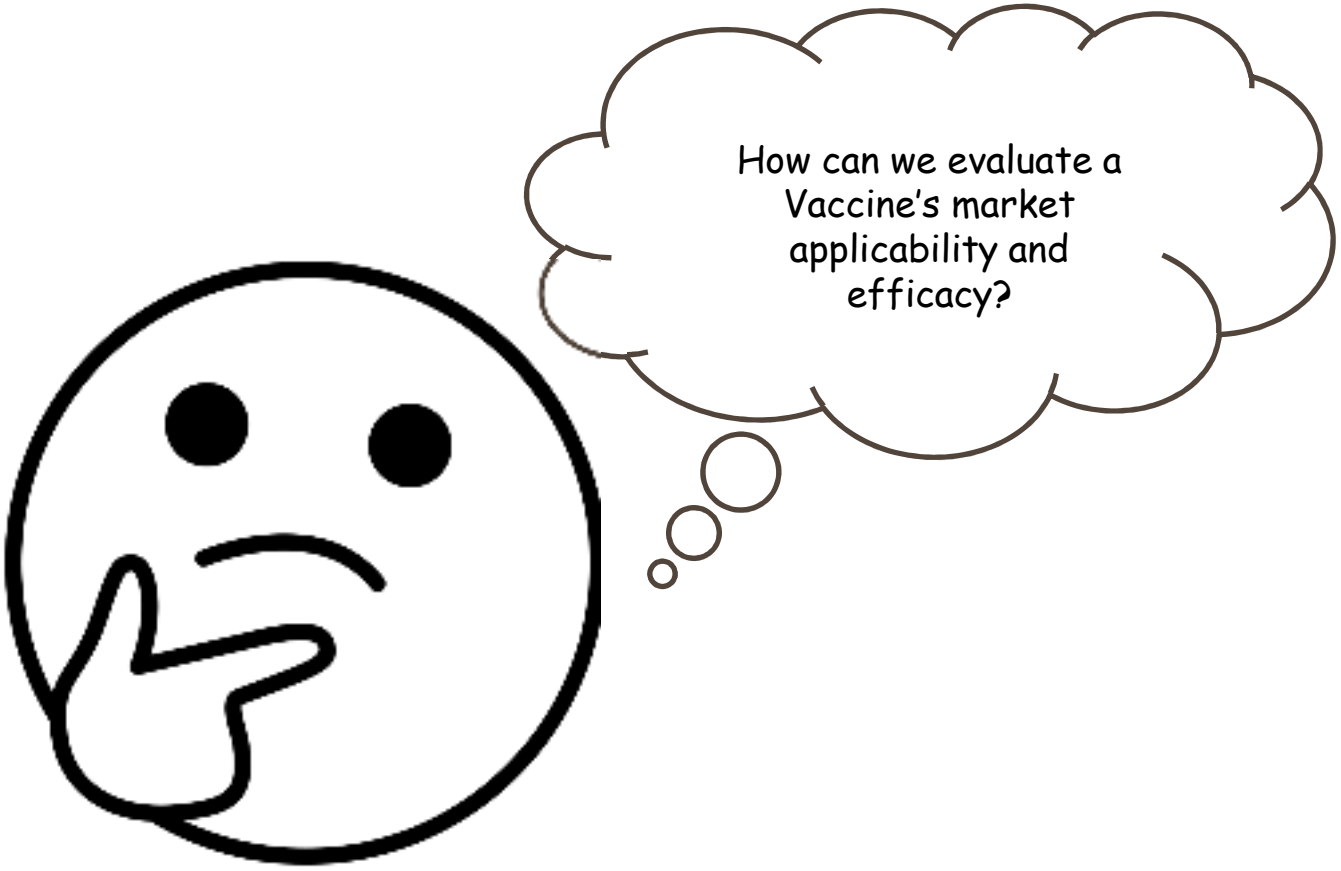
# VACCINE DEVELOPMENT – A multifactorial choice



# VACCINE DEVELOPMENT - Vaccine field trial

| STEPS | Tasks | Assessments |
|---|---|---|
| 1st Step | Training | Train a team of 10 (+) vaccinators able to perform at least 1000-1500 fish/hr each |
| 2nd Step | Field Vaccination | Husbandry practice: Vaccination of commercial scale (500K-1M fish ) |
| 3rd Step | Data gathering | Follow up of cages, recording: mortality, feed, Temp and all essential parameters |
| 4th Step | Data analysis | Critical analysis of data and economic assessment |

# VACCINE FIELD TRIAL



## VACCINE FIELD TRIAL – The Data Analysis

- **First barrier for a Vaccine in Aquaculture is Price.**
- **IP Vaccine can impact between 10%-17% of the fingerling costs**
- **How a extra costs, can turn into more profitable income?**

# VACCINE FIELD TRIAL – The Data and Costs Analysis

**Main Parameters :**

- **Mortality (%)**
- **FCR, ADG etc…**
- **RPS (%)**

**Other affecting parameters:**

- **Biomass at harvest**
- **Size distribution**
- **Farming time**
- **Antibiotic usage**

**Etc…**

# VACCINE FIELD TRIAL – The Data and Costs Analysis

**Other affecting parameters:**

- **Biomass at harvest**
- **Size distribution**
- **Farming time**
- **Antibiotic usage**
- **Etc…**

## CONCLUSIONS

- **Vaccination costs are normally absorbed from the production cycle**
- **Vaccinated fish can produce between 6-18% increase economical profits, per single cage**
- **Vaccine development needs to integrate: disease protection and economical profit**


Thank you
for your attention