
VACCINATION BENEFITS IN TROUT HEALTH AND ITS ADDED VALUE TO FARM ECONOMICS



The Reference
in Prevention
for Animal Health

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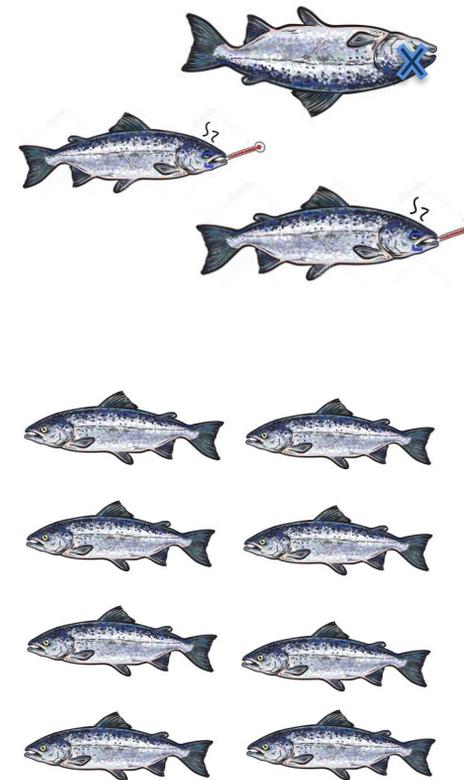
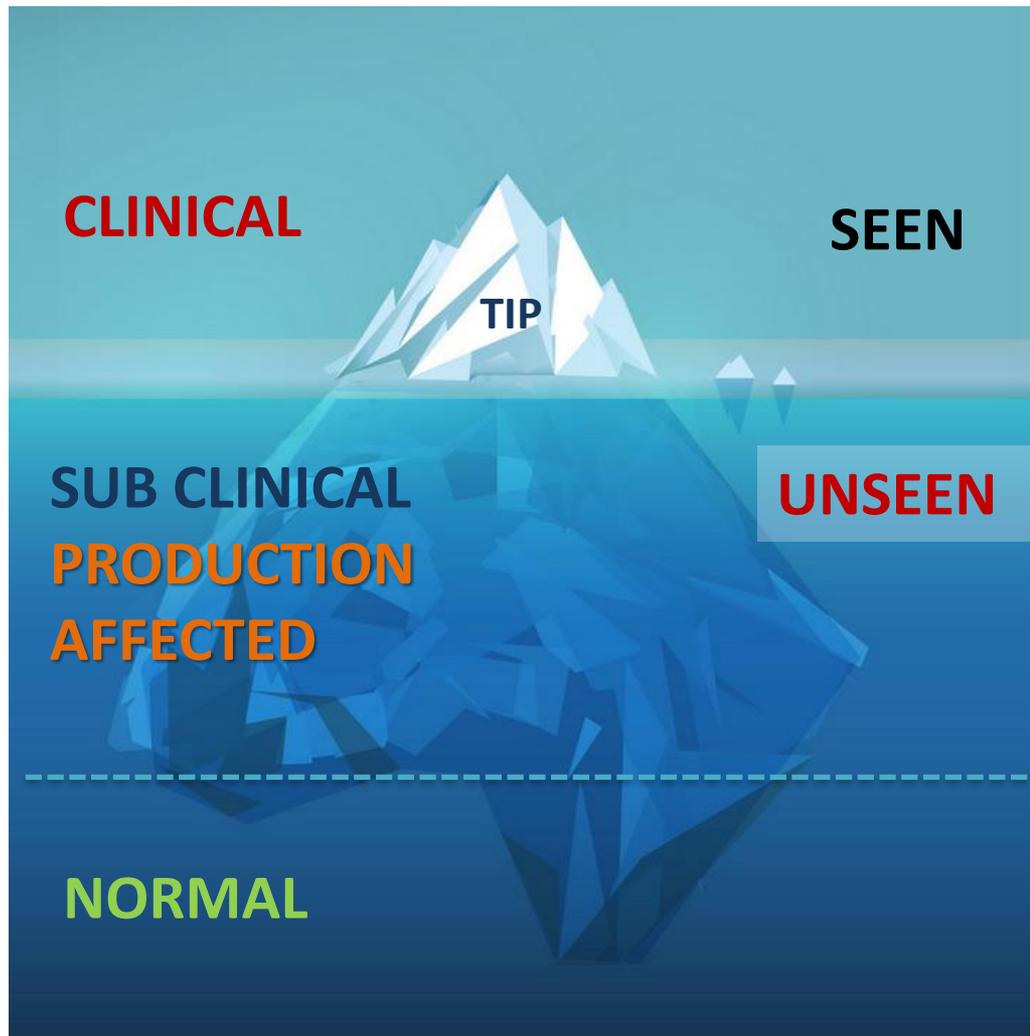
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- 2 Choosing the right vaccine
- 3 How to vaccinate
- 4 What we do

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WHY TO VACCINATE?

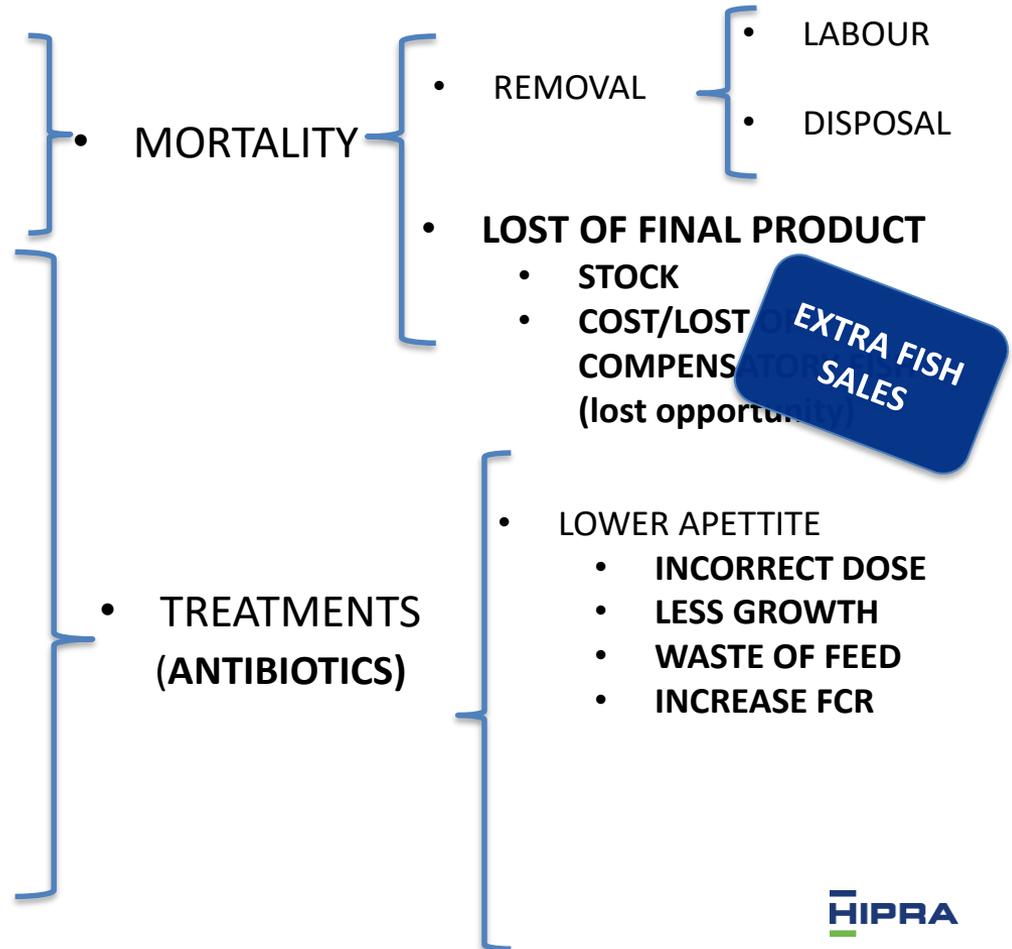
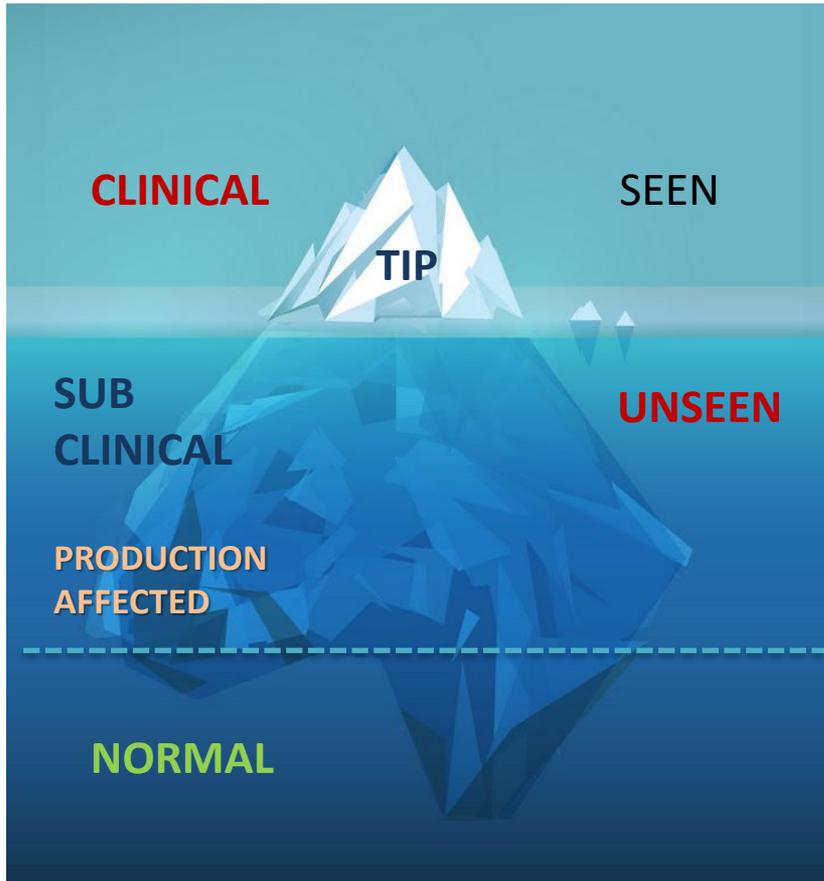


THE ICEBERG PHENOMENON

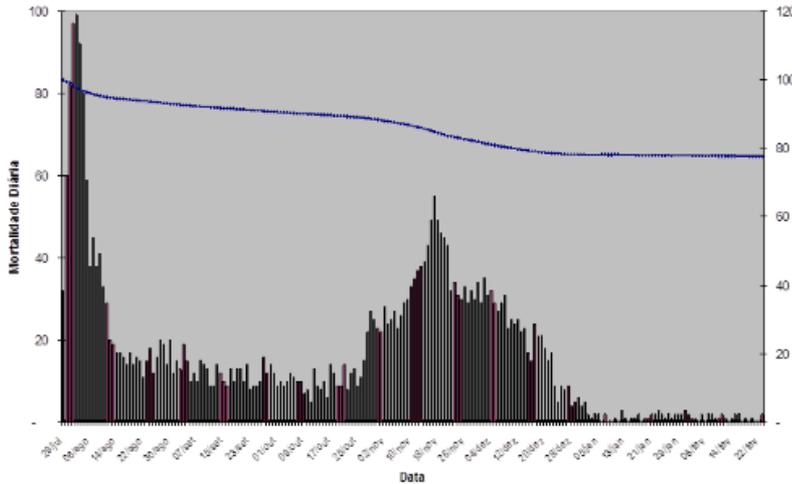


WHY TO VACCINATE

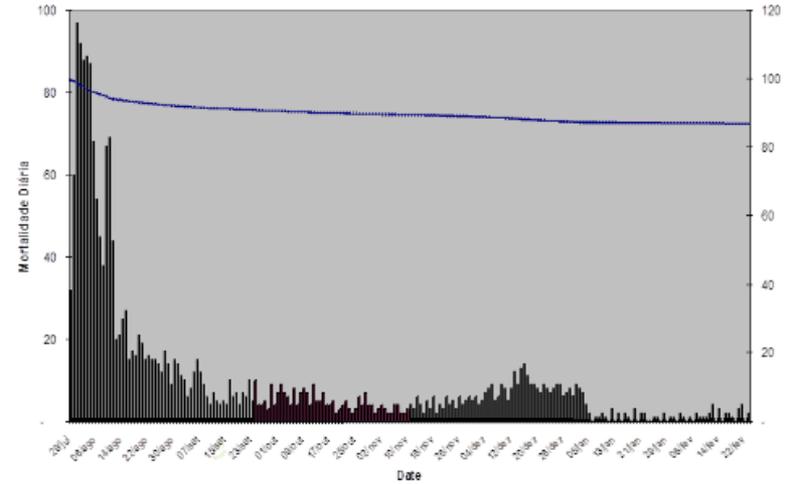
Because **subclinical (silent) cases** of most diseases are considerably **more numerous than clinical cases** in a herd, the **economic cost of subclinical disease usually exceeds that of the clinical disease.**



CONTROL



VACCINATED

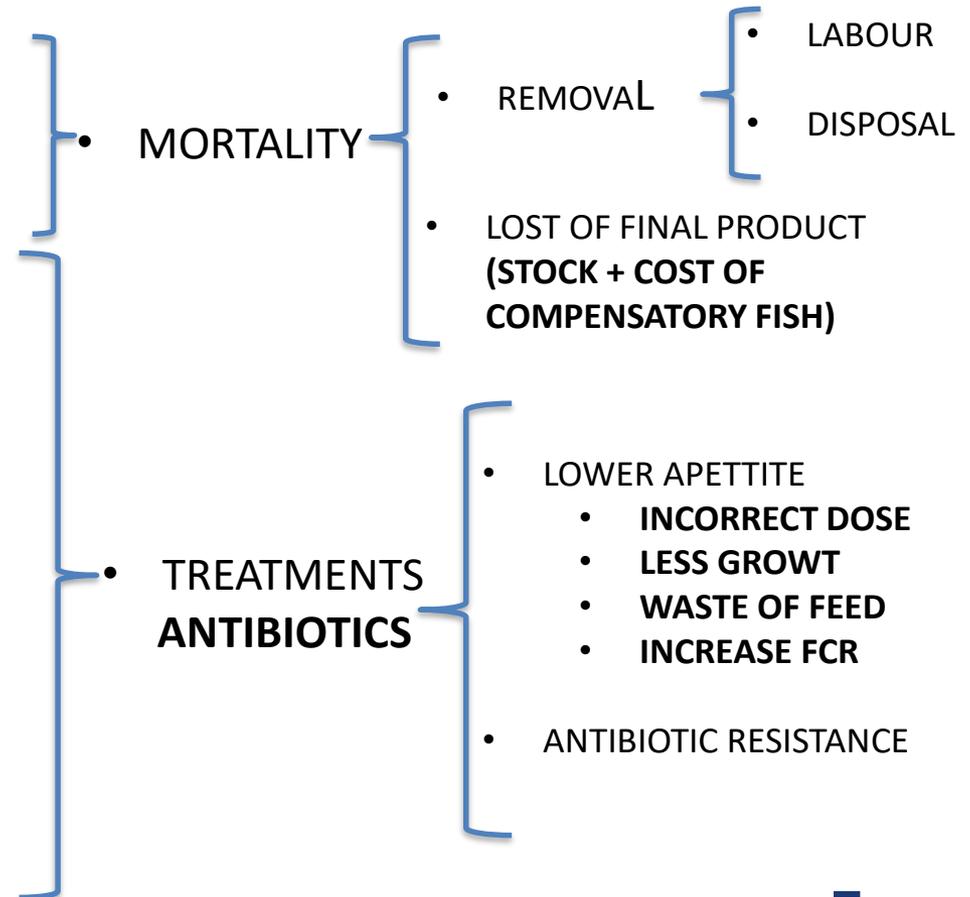
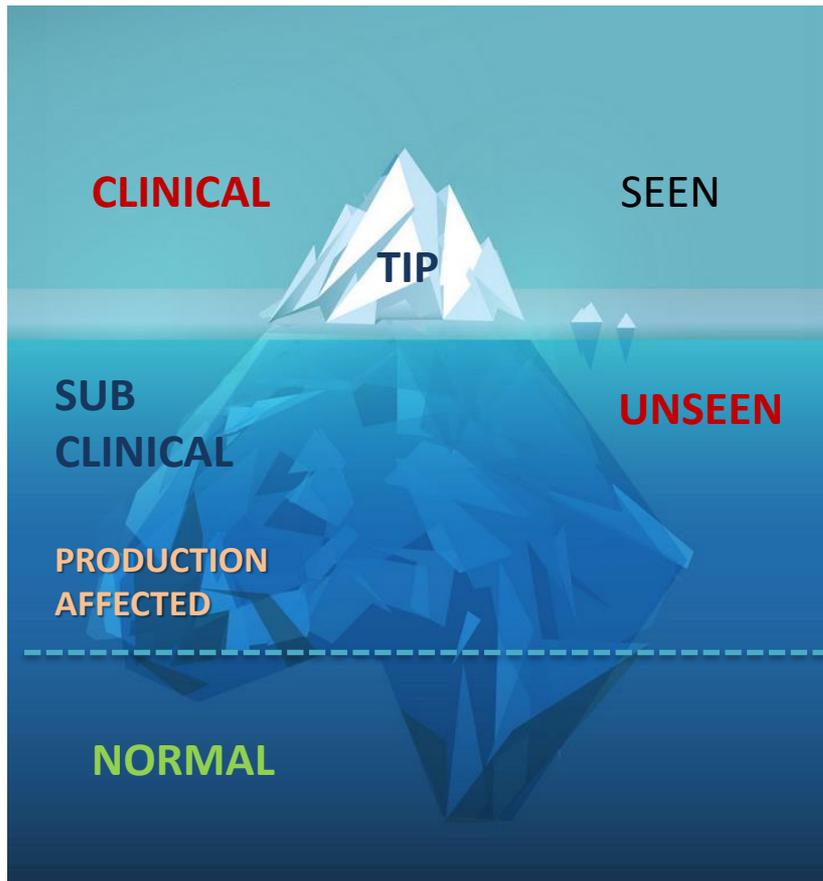


Low Pressure Farm <i>S. agalactiae</i>	Final Production Data	
	% Survival	FCR
Vaccinated Group	87%	1.75
Control Group	78 %	1.96
Difference	9 %	0.21

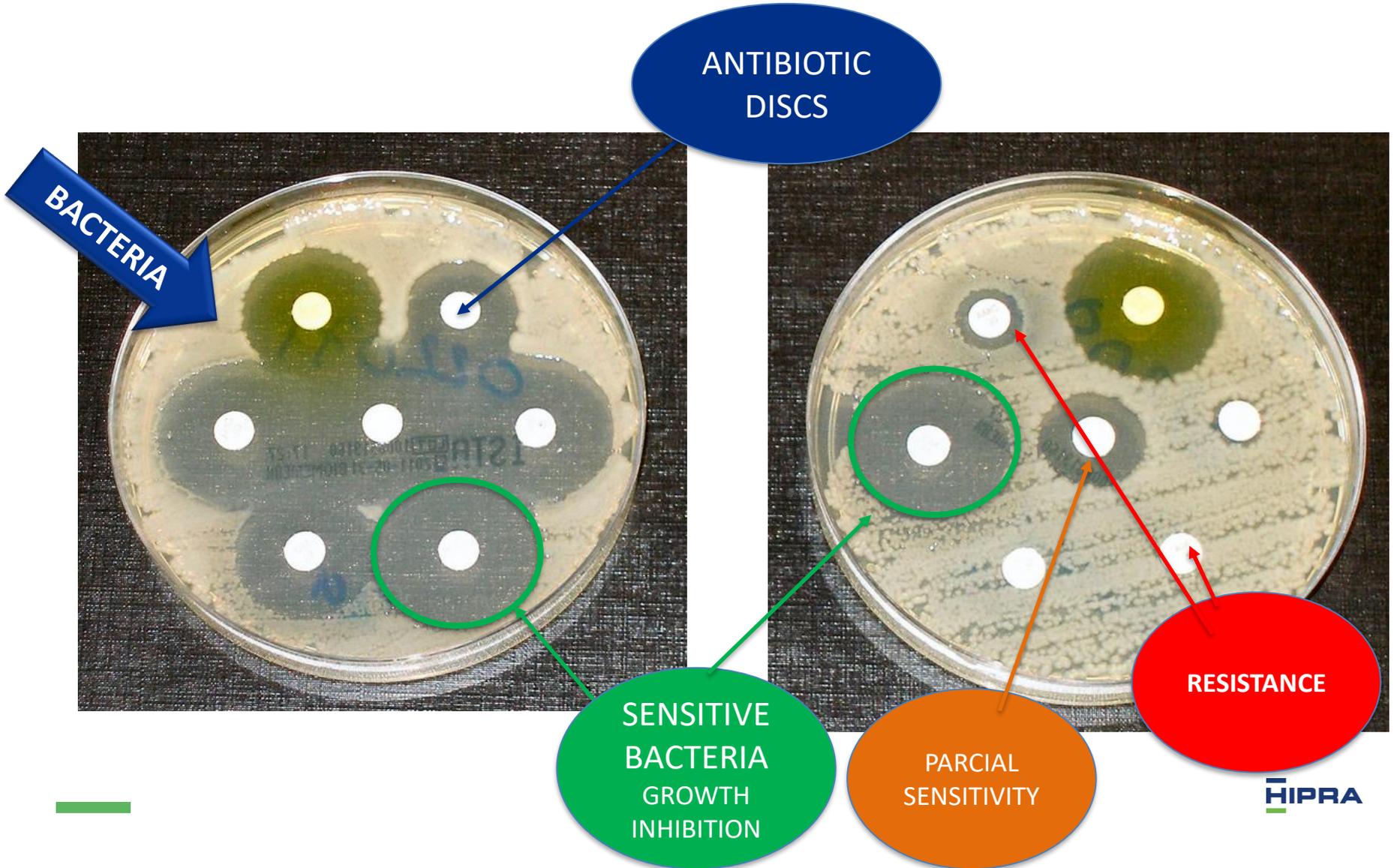
L. Sheng , 2017: Tilapia vaccination trials

WHY TO VACCINATE

Because **subclinical (silent) cases** of most diseases are considerably **more numerous than clinical cases** in a herd, the **economic cost of subclinical disease usually exceeds that of the clinical disease.**



ANTIBIOGRAM



antibiotic EU legislation



Todo

Imágenes

Noticias

Vídeos

Shopping

Más

Configuración

Herramienta

Aproximadamente 1.940.000 resultados (0,49 segundos)

EU passes new **antibiotic legislation**. European Parliament backs plans to halt spread of drug resistance from animals to humans. The **European** Parliament adopted Oct. 25 plans to limit the use of **antibiotics** on farms in the **European Union** in order to keep food free from resistant bacteria.

26 oct. 2018

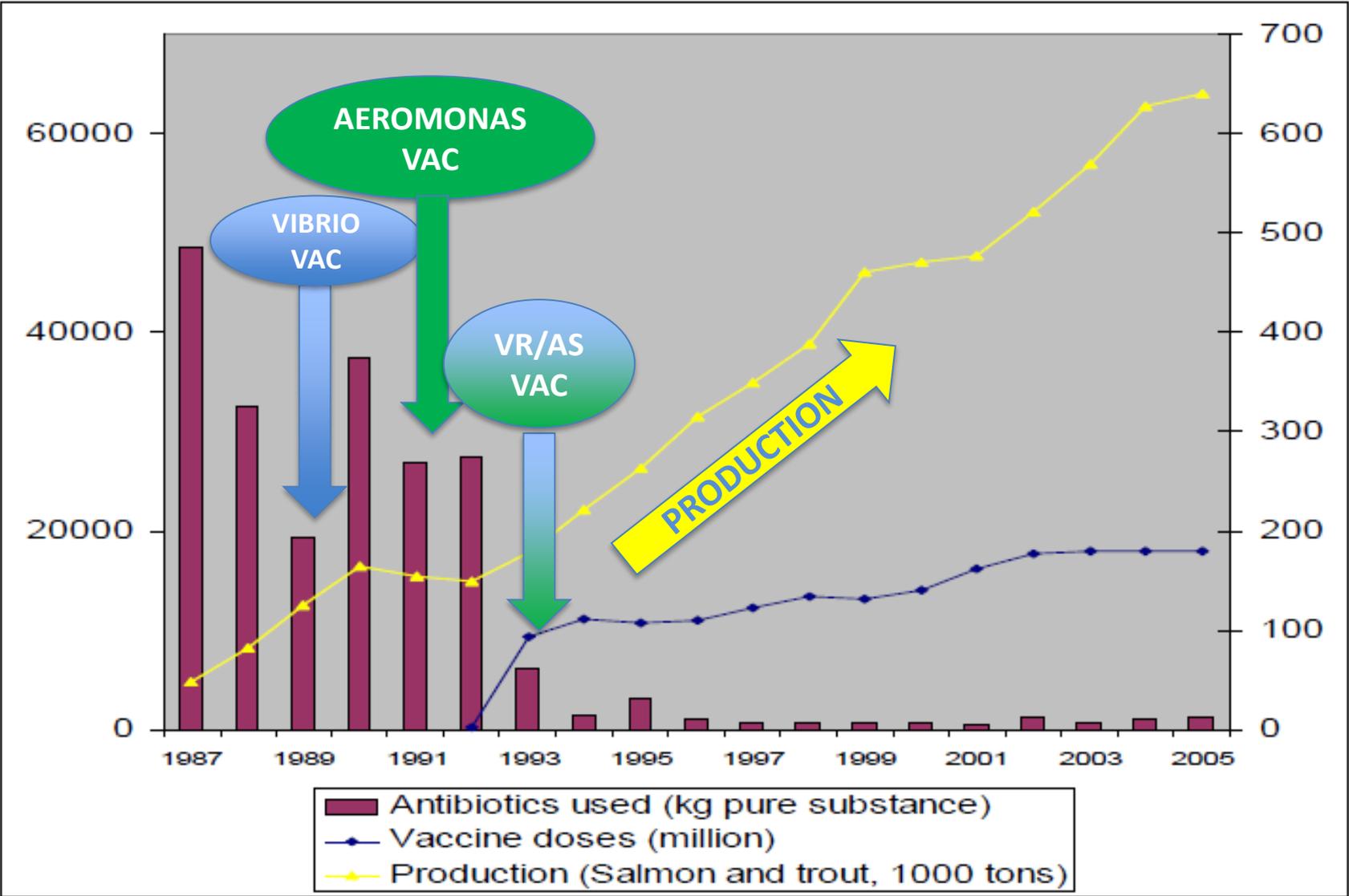


[European Union passes new antibiotics legislation | Feedstuffs](https://www.feedstuffs.com/news/eu-passes-new-antibiotic-legislation)

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- Prevent disease
- Improve survival rates
- Improve FCR, reduce feed cost
- Increase total harvest biomass

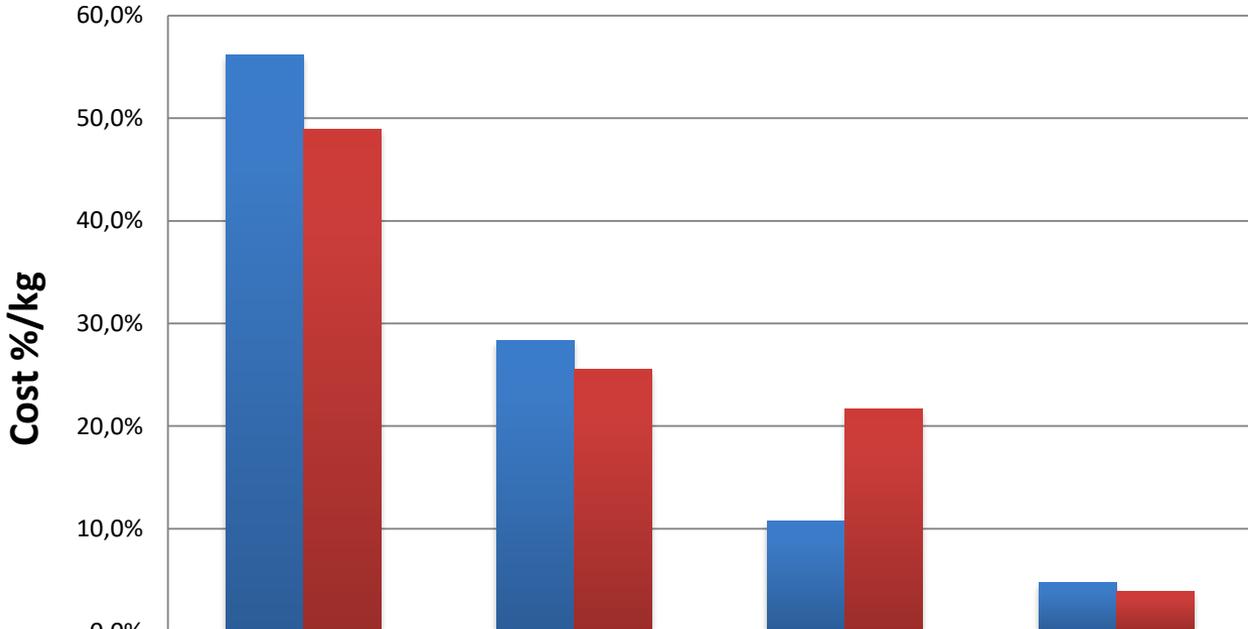
KEY BENEFITS OF VACCINES



Marine Harvest: 2017 Annual industry report

- Prevent disease
- Improve survival rates
- Improve FCR, reduce feed cost
- Increase total harvest biomass
- Improve production efficiency
- Better return on investments
- Farm economic sustainability

Cost breakdown in %/Kg



	Feed cost	Indirect cost	Fry cost	Vaccines
Salmon industry	56,2%	28,4%	10,7%	4,7%
Bream and Bass	48,9%	25,5%	21,7%	3,9%

Thorarinsson and Powell, 2006: Effects of disease risk, vaccine efficacy, and market price on the economics of fish vaccination

VACCINATION cost

- BATCH: 500.000
- Hatching: 10% losses – 450.000 eggs remaining
- Fry to juvenile: (10-20)% losses: 405.000 juveniles
 - Mainly due to RTFS and other parasitic diseases
- Juvenile to market size (300-400g) – BIOMASS: 405.000 fish*300g
>121mT
 - Vaccination cost for 405.000 fish (oil-based vaccine+application):
 - Intraperitoneal injection
 - Commercial vaccine
 - Non-mineral oil-based

6.075 €

36.753

TL

VACCINATION cost

NON-VACCINATED

- Biomass 121 mT
 - 405.000 fish of 300 grams
- *L. garvieae* outbreak at 18-20°C
- Outbreak of 40% mortality = 162.000 dead fish
- € losses: 300 gram/fish
 - 48.600 kg*2€/kg
- REMANING: 243.000 fish
 - 72.900 kg

97.200 €

588.000

TL

VACCINATED

- Biomass 121 mT
 - 405.000 fish of 300 grams
- *L. garvieae* outbreak at 18-20°C
- Outbreak of 5 % mortality = 20.250 dead fish
- € losses: 300 gram/fish
 - 6.075 kg*2€/k
- REMANING: 384.750 fish
 - 115.425 kg

12.150 €

73.500 TL

VACCINATION break-even point

- By having just one *L. garvieae* outbreak, the inversion in vaccine is cost effective
- No matter if the outbreak causes only 20% mortality:
 - Losses: 24.300 Kg= 48.600 €/ 294.000 TL (only taking into account biomass)
 - Vaccination cost: 3.037 €/ 18.377 TL
 - Cost of lost opportunity with no vaccination (81.000 dead fish, 400 g fish)
 - 64.800 €/ 392.000 TL
 - Vaccine of choice – adjuvanted vaccine
 - Non-mineral oil based vaccine causes less side effects
- Excluding: Egg / Fry cost, Feed cost, hand labour, treatments...

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CHOOSING THE RIGHT VACCINE



VACCINATION METHODS

- Oral vaccination: mass vaccination, uncertain dose/ poor efficiency.

- Immersion vaccination
Size fish 1- 5g
 - Dip method:
 - 30s
 - 1:10 solution
 - Bath method:
 - >1 hours
 - 1:100 solution



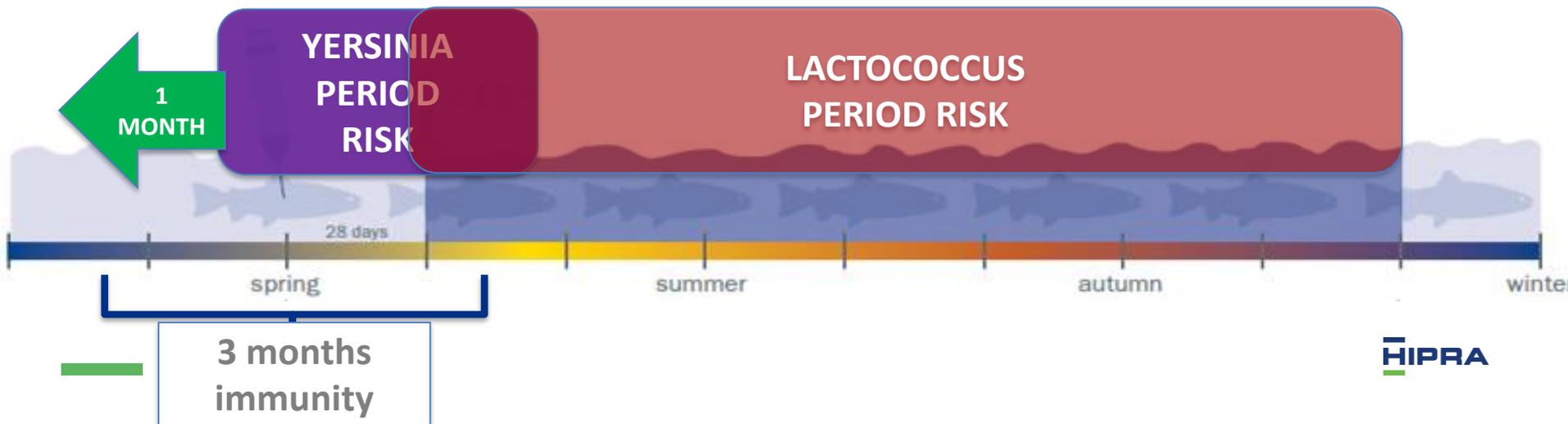
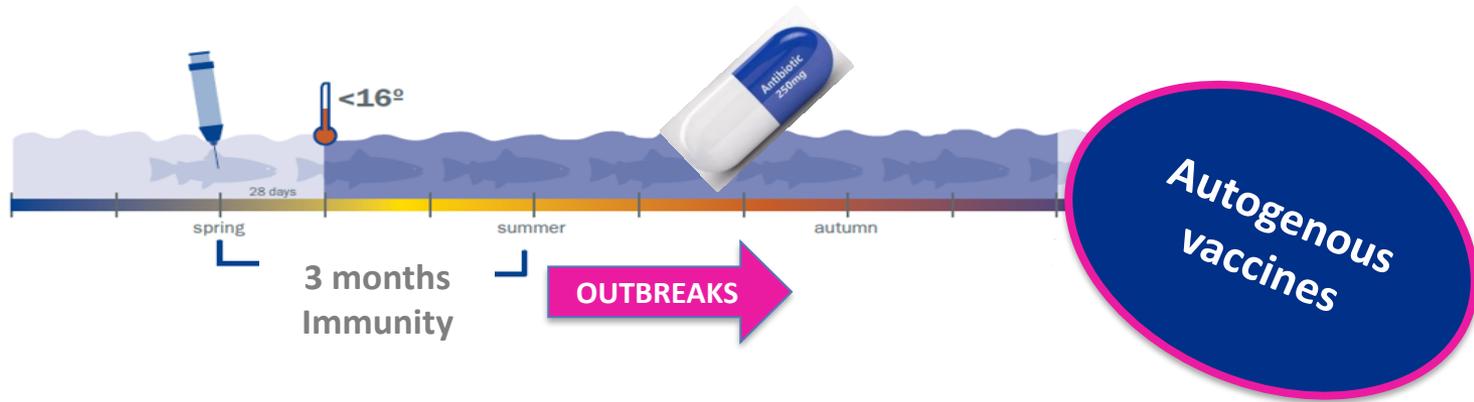
- Injection vaccination
Size fish > 15g
 - Intramuscular
 - Intraperitoneal



- Every fish in the population has received the vaccine and at the correct dose
- Longer duration of protection than immersion vaccines

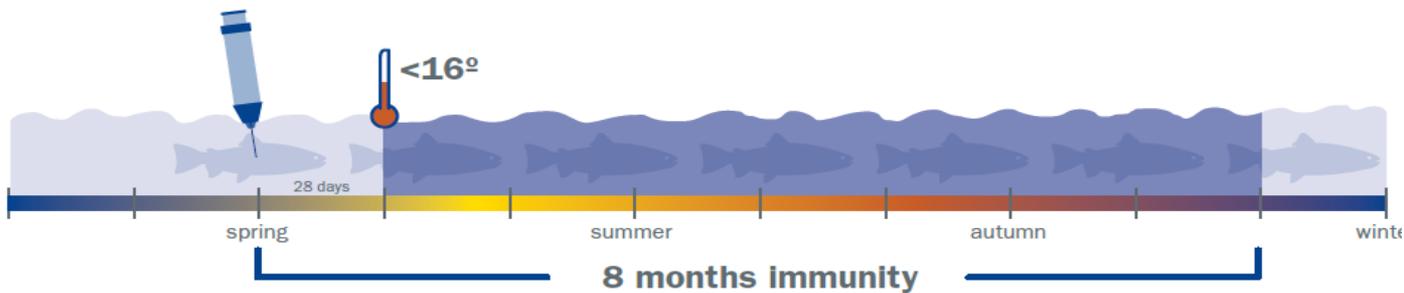
INTRAPERITONEAL VACCINES

- Intraperitoneal : WATER BASED VACCINES



- Intrapерitoneal ADJUVANTED VACCINES

- Adjuvant helps to transport the vaccine antigens and at the same time stimulate non-specific defence mechanisms
- Enhance specific immune response: **Stronger and longer**



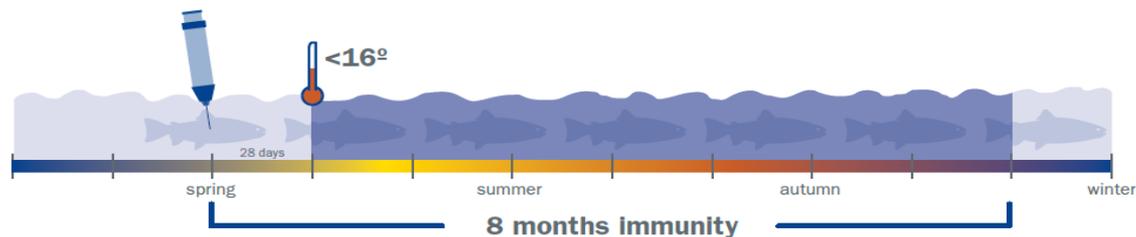
ECONOMICAL BENEFITS OF A LONG LASTING IMMUNITY

1. Better survival

- Better Harvest
- Reduced man labour picking up/ disposing mortalities

2. Reduced number of outbreaks

- Better growth
- Reduced treatments
- **Avoid withdrawal period pre-harvest**
- **Reduced discarded fish at slaughter**



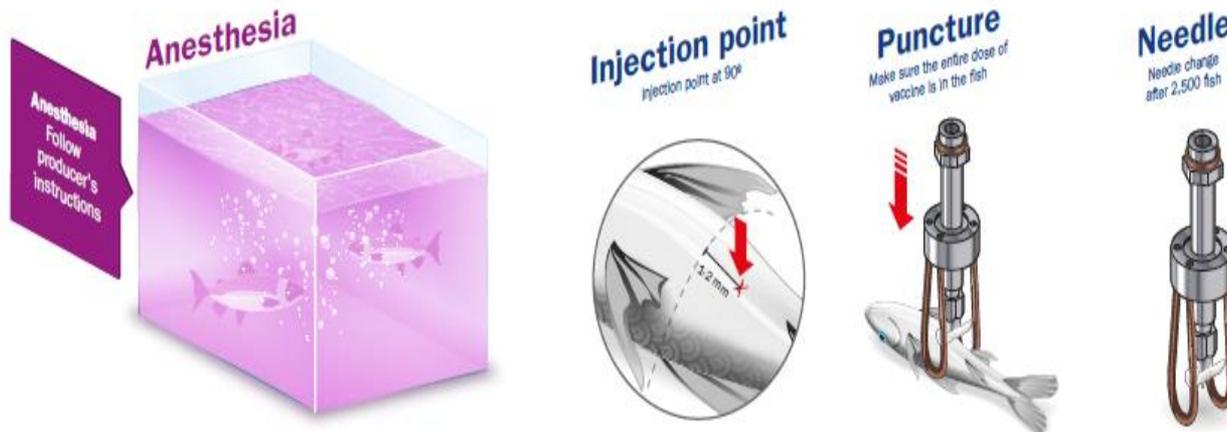
3

HOW TO IP VACCINATE

PRE VACCINATION CONSIDERATIONS

- Health status: NEVER EVER vaccinate sick fish
- Starvation before vaccination (reduce stress)
- Biosecurity: Desinfection of table and equipment

0.1 ml single dose in fish larger than $15g \pm 3g$



ANESTHESIA

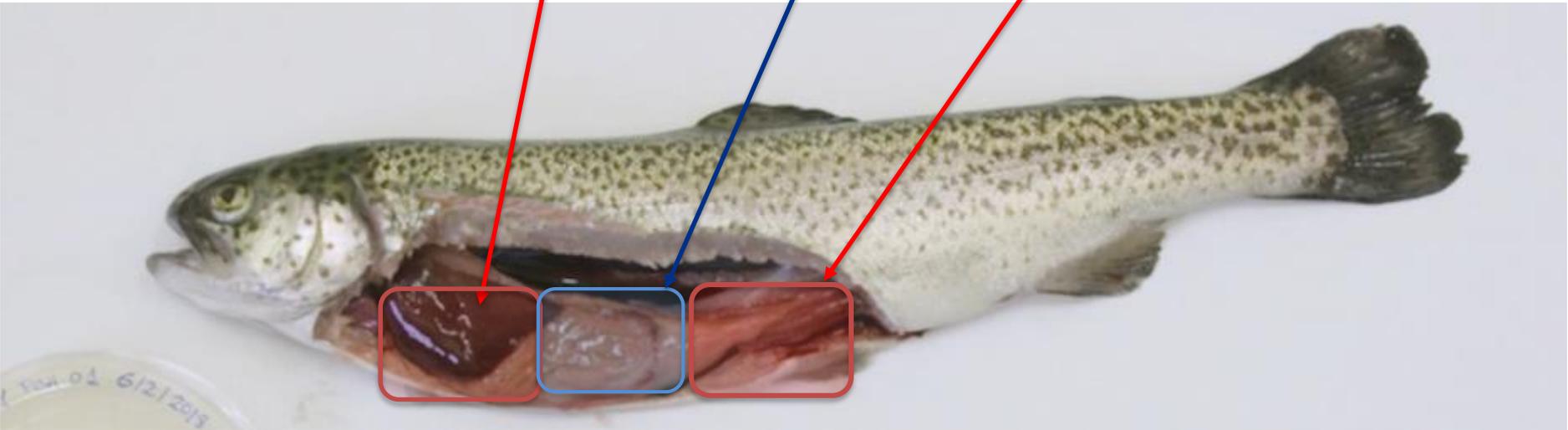
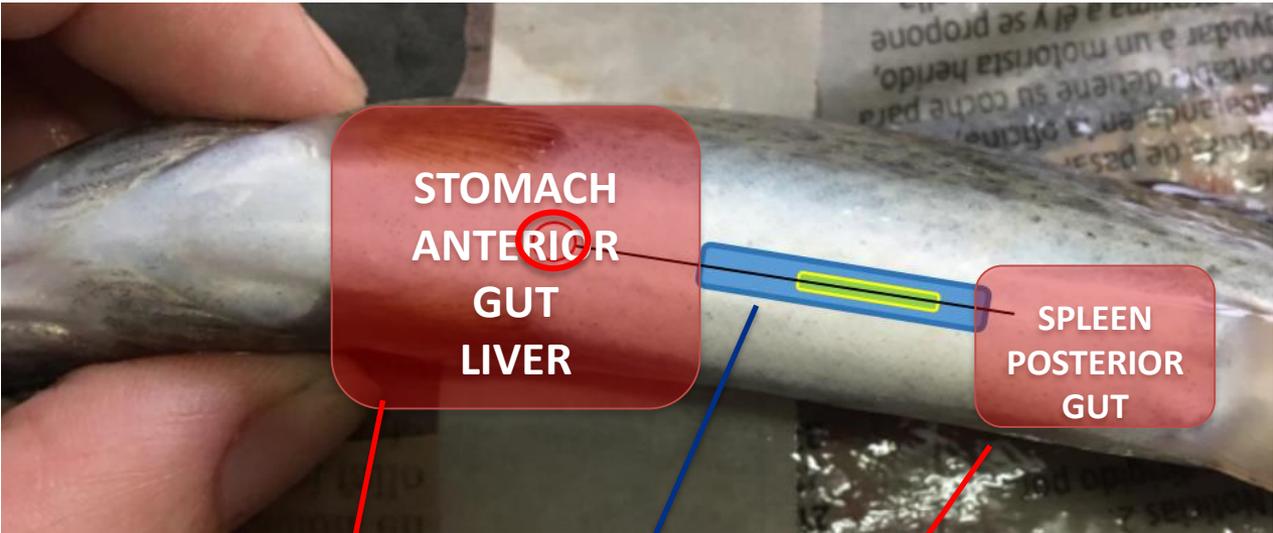


VACCINATION TABLE AND EQUIPMENT





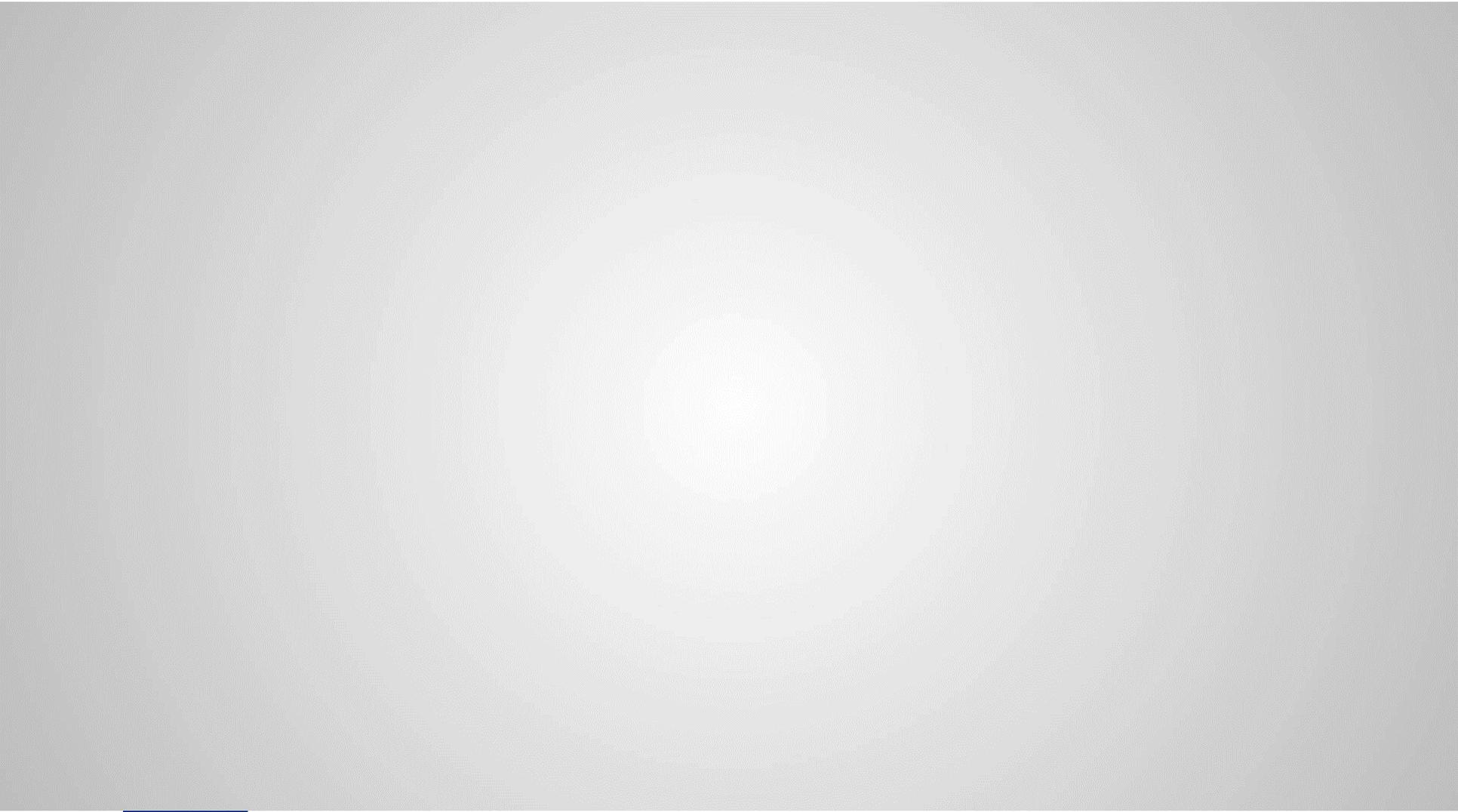
INJECTION POINT



4

WHAT WE DO





WHERE WE ARE





Strategic Positioning

The Reference in Prevention:

- 80% of sales in **vaccines**.
- Own **Diagnos service**, with which we provide technical service to our clients.
- **Fish Health Technical Service** for our clients



- Biosecurity measures incl. **vaccines**, are necessary parts of aquatic animal health management
- **Adjuvanted vaccines** promote a **long lasting immune response** which gives the industry a **beneficial cost/benefit ratio**:
 - Ensure growth
 - Improve QUALITY of final product
 - Reduce mortalities
 - Improve QUANTITY of final product



Teşekkür ederim



Teşekkür ederim



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