

## Aquaculture Feeding Systems

LAND • SEA • RAS



Pellet 50-800 µ Ø Pipe 20 mm

LAND BASED





## Pre-grow

Pellet 1-4 mm Ø Pipe 25-40 mm

LAND BASED





## Ongrowing

Pellet 4-20 mm Ø Pipe 50-90 mm

LAND BASED





## Hatcheries | Live Feed

## For Medium and Big-Scale Hatcheries

Automatic Feeding System of Artemia, Rofiter and Microalgae.





	Minimum	Maximum	
Selector Matrix	6	24	Number of outlets per selector
Feed Type			Live Feed, Microalgae
Number of Silos	1	4	Number of silos per feeder
Length of pipes	1	100	Length of pipes in meters

### For Labs and Small-Scale Hatcheries







# Hatcheries | Dry Feed

## For Medium and Big-Scale Hatcheries

Dosing of micro diets from 200 up to 800 microns







	Minimum	Maximum	
Selector Matrix	20	60	Number of outlets per selector
Size Pellet	200 μm	800 µm	Size of pellet to use
Feeding pipe size	20	20	Diameter of HDPE pipe
Individual Dose	> 10 gr	100 gr	Size of each individual dose
Compressor	5,5 kW	7,5 kW	kW of power consumption
Doses per day	1	> 4000	Number of doses per day
Number of Silos	1	4	Number of silos per feeder
Length of pipes	1	100	Length of pipes in meters

### For Labs and Small-Scale Hatcheries









Centralized feeding systems for pre-growing in land-based fish farms and/or RAS.





	Minim	um Maximu	m
Selector M	atrix 20	200	Number of outlets per selector
Size Pellet	1 mm	4 mm	Size of pellet to use
Feeding pi	pe size 25	40	Diameter of HDPE pipe
Individual I	Dose > <b>10 g</b> r	25 Kg	Size of each individual dose
Blower   Co	ompressor 5,5	7,5	kW of power consumption
Doses per	day 1	> 4000	Number of doses per day
Number of	Silos 1	8	Number of silos per feeder
Length of	oipes 1	400	Length of pipes in meters





Pre-grow FFF









# Container Feeding Systems

CFS









# Ongrowing - Land-based

Feeding systems for ongrowing in land-based fish farms.



	Minimum	Maximum	
Selector Matrix	10	100	Number of outlets per selector
Size Pellet	4 mm	> 20 mm	Size of pellet to use
Feeding pipe size	50	100	Diameter of HDPE pipe
Individual Dose	> 5 Kg	> 400 Kg	Size of each individual dose
Blower   Compressor	7,5	> 30	kW of power consumption
Doses per day	1	1440	Number of doses per day
Number of Silos	1	8	Number of silos per feeder
Length of pipes	1	800	Length of pipes meters



# Ongrowing - Land-based









## Feeding Capacity

	50 T	200T	400T
Number silos:	6	4	8
Silo Capacity	9 T	50 T	50 T
Total Silo Capacity	50 T	200 T	400 T
Silo Volume	12 m³	45 m³	70 m³
Total Silo Volume	72 m <sup>3</sup>	280 m³	460 m <sup>3</sup>
Dosers (Auger Screws)	12	16	16



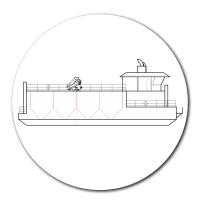
### Selector

		50 T	200 T	400 T
F	eeding Lines	4	3	4
S	elector Matrix	4x8	3x6	4x6
	iameter	63 mm	75 mm	90 mm
N	1ax. Pellet Size	8 mm	15 mm	25 mm
В	Blower	4x15 kW	3x15 kW	4x22/30 kW
F	eeding Rate	40 Kg/m	50 Kg/m	100 Kg/m



## Barge Specifications

	50 T	200 T	400 T
Generators	2x100 kW	2x100 kW	65+180 kW
Diesel tank	2x1 m <sup>3</sup>	2x11 m <sup>3</sup>	2x13 m <sup>3</sup>
Freshwater tank	1 m³	2x3 m <sup>3</sup>	2x5 m <sup>3</sup>
Sewage	0,5 m <sup>3</sup>	3 m <sup>3</sup>	5 m <sup>3</sup>



# Ongrowing - Offshore - Feed Barge

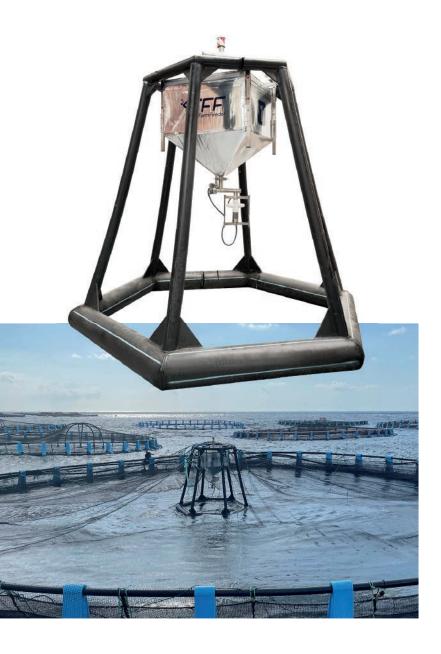


## Measures and Components

	50 T	200 T	400 T
Length - total (LOA)	16,50 m	22,10 m	26,65 m
Beam - total (BOA)	8,22 m	10,00 m	13,00 m
Minimum freeboard	2,35 m	1,65 m	3,07 m
Weight	80 T	120 T	160 T
Cranes	Optional	Optional	Optional
Waves	4 m	2 m	2 m



## Offshore - Cage Feeder



### Advantages

Pre-Growth of fingerlings in cages Increase your SGR Homogeneous growth

### Pre-grow Feeding

Pellets Size	1,5 mm - 3 mm
Dispersion Radius	4,5 m
Feeding Rate	50 Kg/hour

#### Silo

Capacity	250 Kg
Top Loading	Pipe + Cyclone
Silo Recharge	5 min at 50 kg/hour
Ø pipe	50 mm

#### Solar Panel

Solar Panel Size	1 m <sup>2</sup>
Battery Autonomy	2-3 hours

## Ongrowing - Offshore - Cannon

FSC







# Spreaders

### For circular tanks

Inverted Cone



Spreader Rotator Down





Spreader Rotator Up



Cyclone



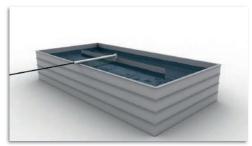


For rectangular tank

Lengthwise



Breadthwise

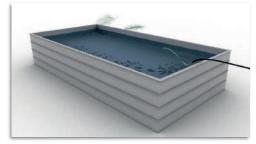


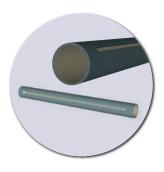


Bifurcator



Parabole

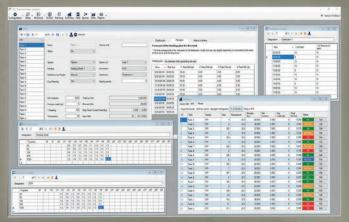




### **Software**

FishFarmFeeder includes in all its feeders a powerfull and complete software for feeding and production control. You can program the feeder to send multiple doses of small quantities throughout the day or schedule larger quantities to be distributed in a few doses in a few hours.





Parameterizable for any species of fish or shrimp

Feeding tables valid for all feed manufacturers

FCR tables valid for all feed manufacturers

Feeding Distribution Tables with customizable Doses at any time of the day

**Standard reports** and possibility to export Information to Excel

Storage of the food history

Individual configuration of each tank with

**Tank status** (ON, OFF, Stand-by)

Feed, FCR and distribution tables per tank

Number of fish and biomass

Custom feeding program

**Tank temperature** 

Percentage of total feed to be given, more or less, at the discretion of the fish farmer

Types of feeding to be used in feed, being able to mix different feeds in the same dose

Feeding plan simulator with time and quantity























SENSORS HISTORICAL REPORTS

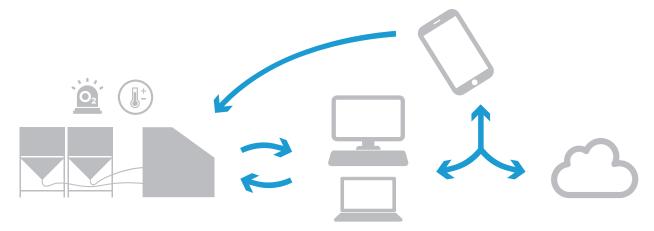
## Software - Integration

**INTEGRABLE** with any production or management software

**Exportable SCADA** information

Real Time reading of all manufacturers of temperature and oxygen SENSORS

Fish and Food TRACEABILITY



## App

The FishFarmFeeder App allows **real-time monitoring of the FFF feeders**. It is accessible from any **smartphone or tablet**, both for **iOS and Android systems**.

Connect with your feeder in real time from anywhere and at any time.













Download our App and you can easily interact remotely with the feeder.









### Loaders

### Big bag Loader

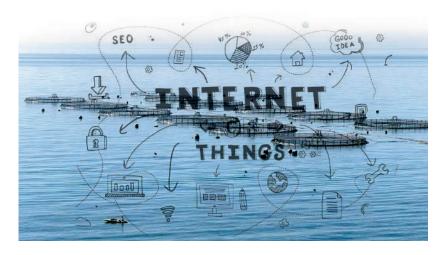






## Software Cloud - AI - Machine Learning

FFF works on AI integration. Under the project Connected Aquaculture the goal is to have a global and continuous information of the production environment based on the Big-Data and Artificial Intelligence.





Our complete hardware-software solution allows the centralized acquisition of multiparameter data to generate "data-lakes" that through Big Data techniques and Artificial Intelligence (AI) allows the sector to have a tool to predict and anticipate risks, advancing towards the concept of precision aquaculture. This AI real-time monitoring is designed to reduce operational cost and improve sustainability.

### **Immersion Vaccinator**





Can hold **up to 50 liters of Vaccine** solution at standard dilution (expandable to 150 liters using an optional kit).

Vaccination time configurable from 33 to 85 secs by the operator.

Fed by a fish pump, the Vaccinator can work with variable water flows up to 15 m³/hr.

Can be equipped with oxygenation of the Vaccine solution. Connectable to a 2,5" fish pump. Adaptive to a 4" fish pump.

Can also be used for anesthetic bath or other therapeutics.

Low energy input (0,55 kW).

Requires an additional external flow of clean water of around 1-1,5 m<sup>3</sup>/hr to carry the fish post-vaccination.

Capacity of the vaccinator: 1.000 to 1.500 Kg/day @ around 2 graverage body weight.







#### **Labour Savings**

The FFF Vaccinator remains under the control of a single operator for the whole process when vaccination at hatcheries often requires a team of 5 or 6 people to reach the same vaccination rhythm.

### Tough construction

The Vaccinator is built from carefully chosen material and equipment. It is seawater resistant and highly reliable.

#### Commissioning

Very easy and shall not require specific assistance. However, FFF is keen to support any new user if needed.





### **Aquaculture Feeding Systems**

LANDBASED • SEABASED • RAS

### Why a Feeder?

FCR optimization • Feed saving • Labor saving
Faster growth • Feed traceability • Fish traceability
Less pollution • Improved fish welfare • Amortization 3 years









#### **OFFICE**

#### **FACTORY**

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