

800



PROJECT

FEED DESIGN LAB



SFEED DESIGN LAB

IFEED DESIGN U





Use of dry and wet algae in feed

Ageeth van der Lee

Project coordinator



Nutritional Research in poultry and pigs ageethvanderlee@feeddesignlab.nl





IDEA at Feed Design Lab

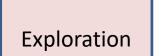
INTERREG IDEA project

Literature research on algae

Research works on algae at Feed Design Lab: Technological application in feeds Effects on animals

Work on algae at FDL





Algae in broilers:

performance



'feed' with 25% protein source: SBM, FM, BSFL, algae

2015

2017





Experiment in the pilot plant with dry

algae November 2018

Feed production for INTERREG IDEA with 2% Chlorella Vulgaris to gain experience on processing with all types of dosing dry and wet algae in feed.



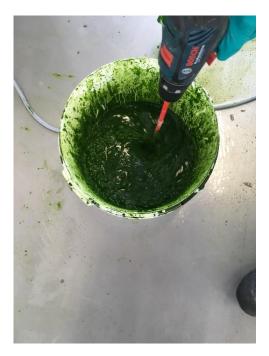
Dry Chlorella Vulgaris was mixed in meal diet and pelleted in different ways.





Experiment in the pilot plant with dry algae

2% dry Chlorella Vulgaris in water mixed and sprayed on a kibble in the vacuumcoater





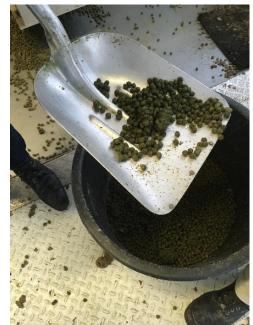




Experiment in the pilot plant with wet algae mix

Frozen algae mix was defrosted and made totally liquid in the cutter. Then dosed in the conditioner producing an extruded kibble.









Experiment in the pilot plant with wet algae mix

Wet algae mix was sprayed on a kibble in the vacuum coater



North-West Europe **IDEA Experiment** in the pilot plant with dry

algae

December 2018

Interreg

Feed production for INTERREG IDEA with 2% Chlorella Vulgaris in piglet feed.

Feed which was left over was used in a 1 week experiment in piglets of 20 kg.

Results:

Healthy pigs, and

better growth/animal/day







Experiment in the pilot plant with dry algae

Analysis performed in algae and feed samples:

Physical properties

Chemical analysis

Microbiological analysis

What is the best way to use algae in feed?





Literature on effects on health

| Ruminants | Performance | Immunity | |
|--------------------|-------------|----------|--|
| Chlorella Vulgaris | - | + | |
| Spirulina | +0 | +0 | |
| Nannochloropsis | - | | |
| gaditana | | | |

| Poultry | Performance | Immunity | Antibacterial | Antiinflammation |
|--------------|-------------|----------|---------------|------------------|
| Chlorella | + | + | + | + |
| Vulgaris | | | | |
| Spirulina | + | + | | |
| Porphyridium | 0 | | + | + |

| Pigs | Reproduction | Performance | Immunity | Antibacterial |
|-----------|--------------|-------------|----------|---------------|
| Chlorella | + | + | + | + |
| Vulgaris | | | | |
| Spirulina | + | + | | |





Literature research on health effects of algae in ruminants, pigs and poultry:

Using algae for positive health in animals: use algae as an additive in feed!







- Aim: Health promoting effects of algae in dogs
- 1 treatment positive control
- 1 treatment 0.5% Porphyridium, washed
- 1 treatment 0.5% Chloromonas, disrupted
- Analytic check algae products and feeds
- **Results:**
- Performance
- Manure score
- IgA in manure: anti inflammation effects











15

Thank you for your attention

