

## Swine manure shallow pit treatment

### Agricola Lorenzini Swine Farm

Molina, Chile

#### Background

Agricola Lorenzini is a 600-sow farrow to finish swine producer located in Molina, Chile. They raise pigs in barns where the manure falls into shallow pits underneath the animals. The effluent is then spread over surrounding crop land. The farm is dealing with high odor issues and very high levels of Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS) and nitrogen.

Effluent high in BOD, TSS and nitrogen can be harmful to vegetation and wildlife in the area and cause health problems for humans. BiOWiSH™ reduces the likelihood of these negative impacts by rendering effluent safer for discharge in less time than other available treatments.

#### Objectives

The specific focus of the trial was to assess the impact of BiOWiSH™ on BOD, solids, nitrogen and odor levels which are all typical measures of the strength of the effluent.

#### Solution

BiOWiSH™ Manure & Odor (Swine) was used for the trial. Specially formulated to digest sludge, manage nutrients and reduce odors from manure lagoons and pits, BiOWiSH™ Manure and Odor Treatment accelerates the breakdown of organic waste and odor causing molecules. BiOWiSH Technologies has another treatment product designed for use on beef and dairy farms.

#### BiOWiSH™ Manure & Odor Treatment Benefits

- Accelerates the decomposition of organic waste
- Reduces the need for sludge pump outs
- Removes rather than masks odors
- Reduces Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS)
- Reduces fly numbers by removing organic attractants
- 100% natural and non-toxic

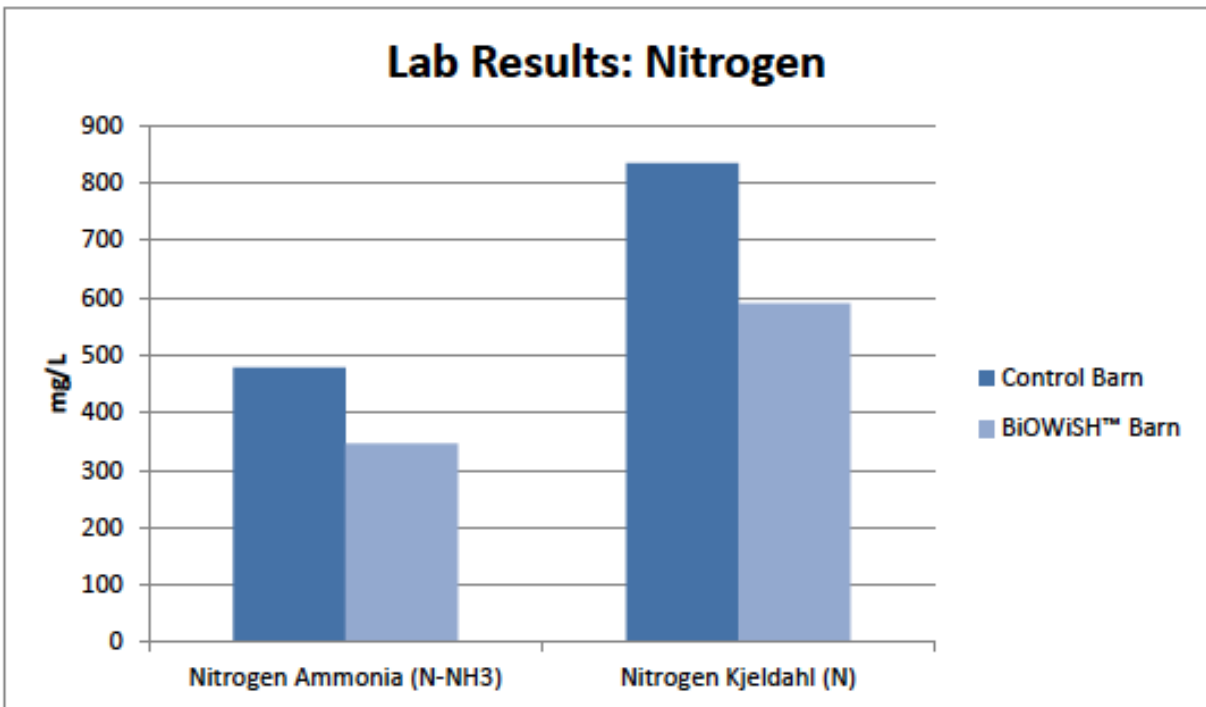
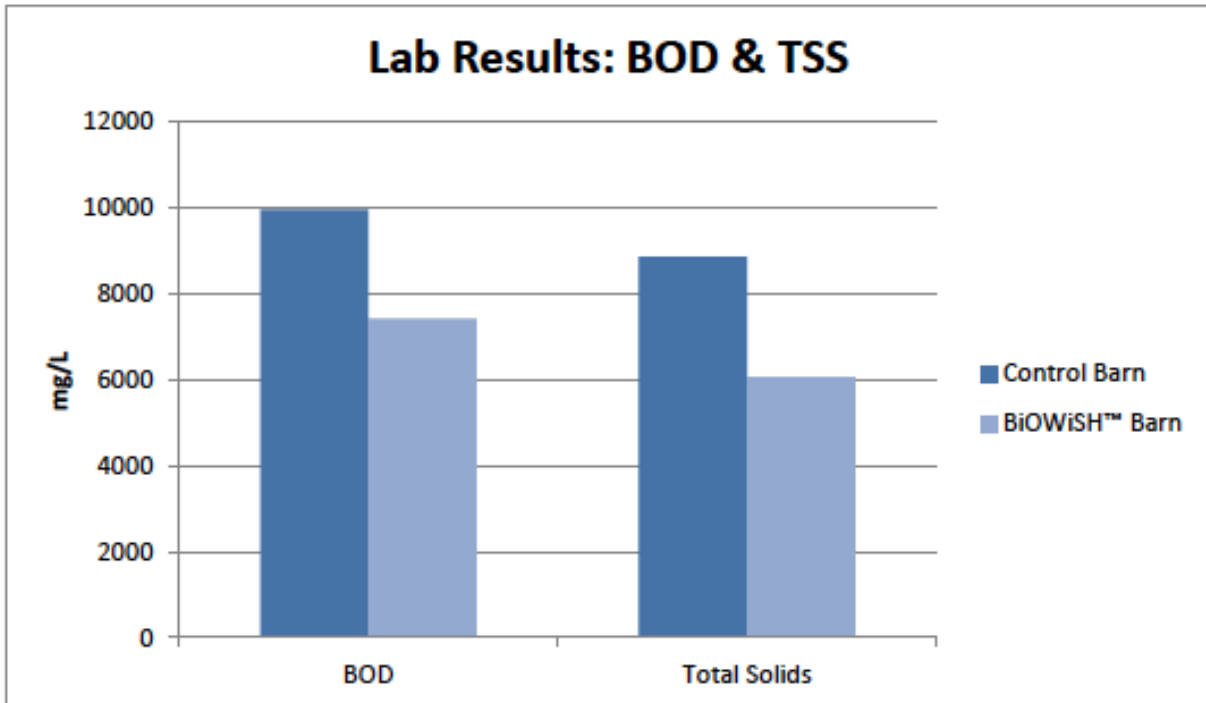
#### Available Sizes

- 100g/3.5oz
- 1kg/2.2lb
- 5kg/11lb
- 10kg/22lb



## Results

Laboratory analysis was obtained from effluent in both barns 25 days after BiOWiSH™ was applied. Effluent was analyzed at HIDROLAB, a commercial laboratory in Chile. Following the introduction of BiOWiSH™, improvements were recorded for BOD, TSS and Nitrogen. People on the farm also reported less odor in the BiOWiSH™ treated barn.



Parameter	Control Barn	BiOWiSH™ Barn	Difference
<b>BOD (mg/L)</b>	9960	7420	- 25.6%
<b>Total Solids (mg/L)</b>	8865	6070	- 31.5%
<b>Nitrogen Ammonia (mg/L N-NH3)</b>	479	346	- 27.8%
<b>Nitrogen Kjeldahl (mg/L N)</b>	835	590	- 29.5%

## Conclusion

BiOWiSH™ significantly lowered the BOD, TSS and nitrogen levels in the barn that was treated when compared to the non-treated barn. Odor was also reduced through human olfactory observation.

As a powerful composite biocatalyst, BiOWiSH™ effectively accelerated the natural decomposition of the swine manure in the treated barn, making it safer for use on nearby crop lands.

## Implementation Program

The effluent management system at the trial site consists of “shallow pits” below the barn floor, collecting swine waste. Each barn consists of 10 pens and houses approximately 240 pigs. Piglets arrived into the control barn seven days before the piglets arrived into the BiOWiSH™ treated barn.

400 grams of BiOWiSH™ was activated in 40 liters of water. The BiOWiSH™ water mixture was added to the shallow pits of the treated barn 12 days after the piglets arrived. The control and BiOWiSH™ treated barn were flushed on the same day which was 25 days after the piglets entered the treatment barn. Samples were taken from the control barn and the BiOWiSH™ treated barn right before flushing took place.

## Contacts

### BiOWiSH Technologies

Tel: +1 312 572 6700

Email: [animalag@biowishtech.com](mailto:animalag@biowishtech.com)

Web: [www.biowishtech.com](http://www.biowishtech.com)

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