

## **Farm test**

### **Manual cleaning with a high pressure cleaner of pig houses compared with robot washing.**

#### **Background**

The test was done by the Danish Agriculture Advisory Board.

The test was carried out at 8 pig Farms I Denmark autumn 2006.

The farms had all invested in a washing robot and they have had the robot in action from 8 months up to 18 months before the test was conducted.

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#### **Robot washing in Pig houses**

-Goodbye to an unhealthy and dirty work.

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#### **Manual cleaning with a high pressure cleaner.**

Manual cleaning with a high pressure cleaner is the most common way to clean pig houses today due to the fact that it is easier to clean in spaces were it otherwise is very difficult to get into. But the manual cleaning is looked upon as the worst and most demanding work in the agriculture sector.

#### **Physical demanding work**

The manual cleaning gives you both short as well as long term injuries. The short term injuries could be repetitive strain injuries, cutting injuries from the water ray, infected eyes and so on. The long term injuries could for example be allergic symptoms, eczema, hearing damages, "white fingers", tennis elbows, muscle strain injuries, breathing difficulties, lower lung capacity and psychic strain.

#### **Dangerous work**

A high pressure cleaner is a working tool and it could be dangerous if it is used the wrong way. The most high pressure cleaners are working with a pressure up to around 200 bars. Most users when washing is looking the handle with tape in order to make the work easier. This is strictly against the safety regulations but very common.

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#### **Noise and dust**

The high level of noise when washing manually is so high that you are actually allowed to wash for only 2-3 hour pro day if you should follow the legal working regulations. The washing causes high concentrations of nitrogen compounds in the air. Nitrogen compounds are small dust particles witch are almost impossible to filter away and they are very unhealthy for the lungs. When washing manually the legal working regulations demands that you wear protection gear.

Washing manually with a high pressure cleaner also releases large number of mites, fungal spores and different types of bacteria's, all of them very unhealthy for the human.

### **Physical inconveniences when washing manually**

- Short term joint and muscle pains.
- Chronicle joint injuries after washing manually over longer periods.
- Hearing impairment
- Breathing difficulties and pneumonia.
- Higher level of absence due to sickness

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### **Psychic inconveniences when washing manually**

- Monotonous work and not at all motivating
- Leads to a higher level of absence due to the works characteristics.
- Bad working atmosphere among the staff. Who will do the washing and who will tend to the animals?
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An interview with all of the eight farms in the test showed unambiguous the following advantages when washing with a robot compared when washing manually with a high pressure cleaner.

-A better physical and psychic working environment for the staff.

-More motivated and satisfied staff.

-Easier to recruit and keep skilled staff.

-No joint and muscle problems among the staff after the robot had taken over the cleaning work.

-Less absence among the staff after starting with robot cleaning.

### **Cleaning with a Robot**

In the last years washing robot has been introduced in the market. These robots can take away most of the demanding physical washing work. The amount of manual work is reduced and the staff can focus to other more profitable and exiting tasks. This will lead to a better physical and psychic working environment for the staff. The result will also be less sick absence and it will be easier to keep and recruit staff while they taking care of the pigs instead of washing the pig house.