

Efficacy of drySTART™ in reducing the bacterial colonies

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Introduction:

Research conducted at Atlantic Swine Research Center demonstrated the benefits of using DryStart™ in pig facilities. This study showed the antibacterial nature of DryStart™ by reducing the amount of germs by 3 times. As Dr. Hurnik mentioned in his executive summary, the severity of many diseases are dependant on the initial dose animals are exposed to. It is logical to expect that DryStart™ treated pens would have a lower incidence of disease.

Material and methods:

In order to determine how applicable Dr. Hurnik study would be on Ontario swine farms, three more studies were conducted using DryStart™. Two of the studies included two types of farrowing rooms: one, a continuous flow and the other an all in all out system. The third trial was conducted in a research nursery. The protocol of the experiment was the same for each trial except the application of DryStart™ varied according to the type of room: Clean, disinfect and dry the room: Swab different flooring spots of 10 square cm using Fisher sterile swabs: Streak the swabs on E.coli/Coliform Chromogenic selective medium or Sheep Blood Agar Petri dishes: Incubate plates for twenty four hours at 35-37°C by using an electric blanket or a heat bulb (has to be at 21 inches above floor height and plates have to be protected from chilling or overheating by using some soaker pads): Visual recording of total number of colonies: Applying DryStart™ at a 50-100 grams/m² rate. The application methods used included a flour sifter or a leaf blower, depending on the type of the room: Twenty four hours after the initial samples were taken the same spots were swabbed and the plates incubated using the same method: Visual recording of total number of colonies was conducted and the results were compared.

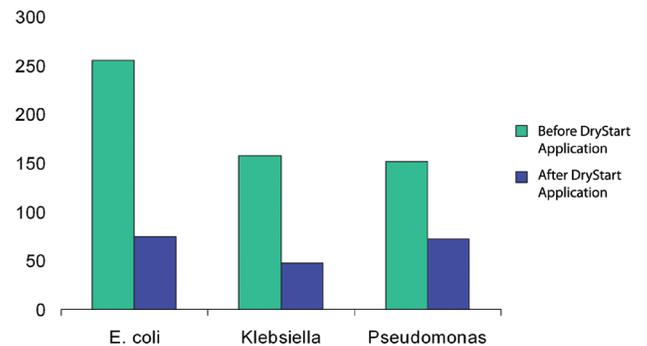
Results:

Trial # 1: Continuous flow Farrowing room

Typically, four or five sows are weaned and the crates are washed with soap, then left to dry and other sows close to farrowing are loaded in the next day. We tested four crates by using ten pairs of E.coli/Coliform Chromogenic plates which were incubated with an electrical blanket. DryStart™ has been applied with a flour sifter at 100 g/m².

There was a 2.81 times reduction in number of bacterial colonies.

Continuous Flow Farrowing Room
(Average Bacterial Colonies)



Plates incubated before applying DryStart™



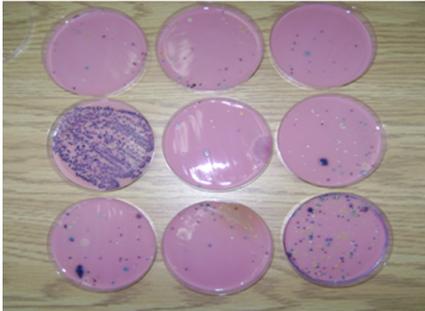
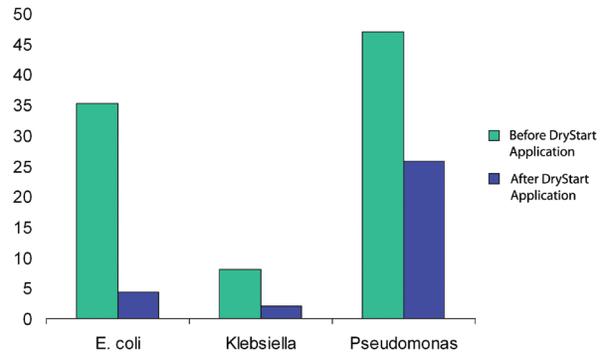
Plates incubated after applying DryStart™

Trial # 2: All in All out Farrowing room

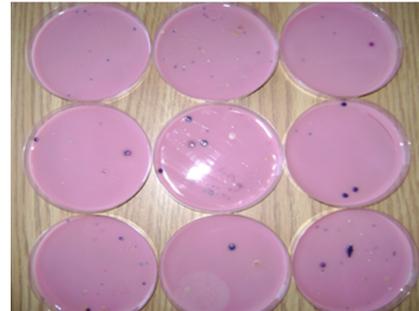
An empty room was pre-soaked, washed, disinfected and dried for twenty four hours. Nine spots were swabbed: eight on the floor and one on the wall and E.coli/Coliform plates were incubated using an electrical blanket. DryStart™ was applied with a leaf blower at the rate of 50 grams/m². The same spots were swabbed after twenty four hours.

There was a 4.6 times reduction in number of colonies.

All in all out Farrowing Room
(Average Bacterial Colonies)



Plates incubated before applying DryStart™



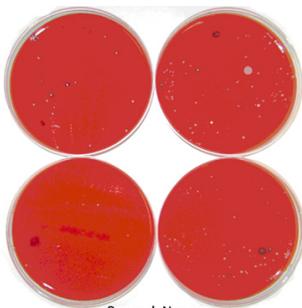
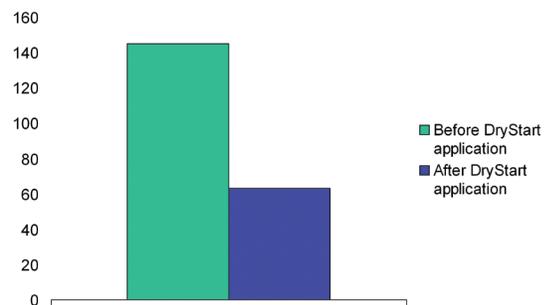
Plates incubated after applying DryStart™

Trial # 3: Kenpal Research Nursery

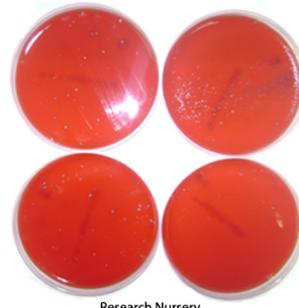
The room was washed, disinfected and dried for twenty four hours. Four different spots were swabbed in a diagonal pattern and Blood Agar Petri dishes were incubated under a heat bulb.

There was a 2.3 times reduction in number of colonies between test and control plates.

Research Nursery
(Average Bacterial Colonies)



Research Nursery before drySTART™ application
Plates incubated before applying DryStart™



Research Nursery after drySTART™ application
Plates incubated after applying DryStart™

Conclusions:

On farm trials results were similar to the results of the study conducted by Dr. Hurnik. The additional data indicates that DryStart™ works in all types of facilities including facilities that have been meticulously cleaned. These studies demonstrate the efficacy of DryStart™ to reduce germs may be due to the capacity of the product to absorb moisture or to the antibacterial nature, or may be a combination of both.

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the **START** **line**™