

Efficacy of drySTART™ in reducing bacteria counts in a poultry barn, and in improving productivity of birds.

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Introduction:

The efficacy of drySTART in reducing bacteria counts in pig barns has been shown in different trials. Hurnik (2007) found significant reductions in bacteria counts in different places of a pig barn after the treatment of 300g/m² drySTART. Rosca (2007) also found significant reductions in bacteria counts in a pig barn after the treatment with 100 g/m² drySTART. This trial was conducted to test the efficacy of drySTART in reducing bacteria counts in a poultry barn.

Objectives:

To test the efficacy of drySTART in reducing bacteria counts in a poultry barn.

To test if the productivity of birds in a poultry barn could be improved by treating treatment with drySTART.

Material and methods:

The trial was conducted in two barns, on the same farm. The two barns were washed and disinfected with Fumalyse.

One barn was treated 24 hours after disinfection with 100 g/m² drySTART; this was the test barn. The other barn was not treated with drySTART; this was the control barn.

To count bacteria colonies, four 10 cm² areas were swabbed, and the swabs were immediately passed on the surface of Columbia Blood Agar with 5% sheep blood culture media. Plates were incubated for 24 hours under heat bulbs at 37 - 38° C and numbers of counted colonies were recorded. The control and test barns were swabbed 24 hours after the application of drySTART and the colonies were counted and recorded. The efficacy of drySTART was assessed by comparing the reductions in number of bacteria colonies between the first and the second count. Changes in the number of colonies from the first to the second swabbing are shown in a table and graphically represented (Table 2, Figure 1).

Comparisons of productive parameters were made between the two flocks of broilers, after the birds were sent to the slaughter room.

Results and Discussion:

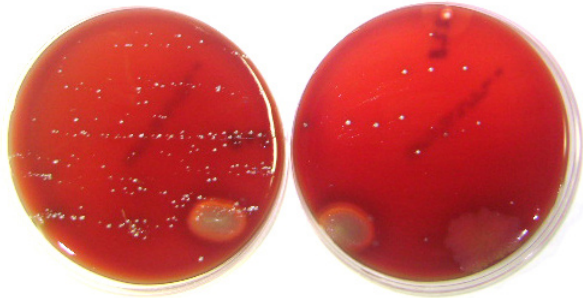
Overall, chickens in the treated barn performed better in all parameters studied. There was 3,310 kg more live weight of chickens shipped from the treated barn, there were 218 less birds lost, which corresponds to a 1.97% reduction of mortality (Table 1).

Table 1

Parameters	drySTART Treated Barn	Control Barn
	16-Jun-08	16-Jun-08
Birds placed	11,094	11,094
Birds shipped	10,088	9,870
Weight shipped	40,970	37,660
Weight condemned	736.88	706.01
# Birds condemned	181	185
Birds lost	1,006	1,224
Mortality	9.06%	11.03%
Average bird weight	4.061 kg	3.816 kg
Average daily gain	76.63	71.99
Total revenue	\$58,509.21	\$53,740.53
Total cost of feed	\$29,439.52	\$28,237.81
Total expenses	\$36,601.23	\$35,399.53
Margin/bird	\$2.17	\$1.86
Feed conversion	2.065	2.254
Net margin	\$21,907	\$18,341
Feed cost/gain	\$0.72	\$0.75

Although the data in Table 1 may demonstrate improved performance in the treated barn vs. the control barn, further, more controlled, research needs to be completed to validate these results.

drySTART Treated Barn



Before Treatment 24 hrs After Treatment

Untreated Barn



Initial 24 hrs Later

drySTART Treated Barn



Before Treatment 24 hrs After Treatment

Untreated Barn



Initial 24 hrs Later

Table 2

Barn # 1 (washed, disinfected, drySTART application)
Bacterial Colonies Counted

Plate identification	Before drySTART	After drySTART	Difference
11	32	31	-1
12	53	28	-25
13	25	16	-9
14	91	25	-66
Total	201	100	-101
Average	50.25	25	-25.25

Bacterial colonies were reduced by 49.70 % after drySTART application

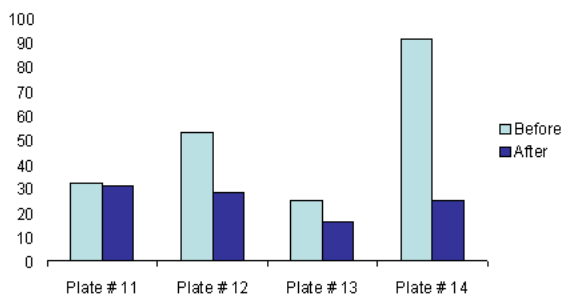
Barn # 2 (washed, disinfected, **no drySTART application)**
Bacterial Colonies Counted

Plate identification	17-Apr-08	18-Apr-08	Difference
21	106	183	77
22	21	56	35
23	180	153	-27
Total	307	392	85
Average	102.33	130.67	28.33

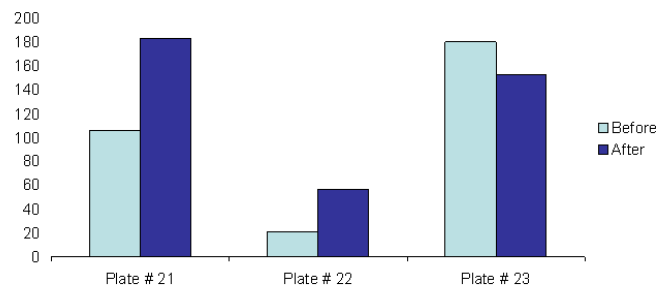
Bacterial colonies increased by 27.69 % on the second day of testing

Figure 1

Poultry barn- Bacterial colonies Barn # 1



Poultry barn- Bacterial colonies Barn # 2



It is important note that during the last week in the barn, there was a rise in the environmental temperature, which may have caused heat stress to the birds and as a result increased mortality.

The producer observed that the barn where drySTART was applied was drier and birds were cleaner, compared to those in the non-treated barn.

Conclusions:

Bacterial counts were reduced through the application of drySTART. It may also be logical to conclude that any reductions in bacterial counts may contribute to help improve productivity, but further research needs to be completed to validate this.

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