



## Clean Eggs, Healthy Chicks

*A project funded by Growing Forward 2 found wide variation in how hatching egg producers clean eggs, and developed best practices to minimize bacteria and the need for antibiotics.*

Between the hens, the roosters, and the dirt, the environment in a hatching barn isn't pristine. Almost as soon as eggs are laid, they'll pick up some degree of dirt. If an egg is left that way, bacteria can grow on the shell and could affect the chick once it emerges.

That's why hatching egg producers normally clean or wash their eggs. The cleaner the egg, the less likely a bacterial infection will occur that may require the use of antibiotics.

"Farmers are using many different methods to clean their eggs," says Brenda Schneider, poultry research technologist with Alberta Agriculture and Forestry (AF). "Some dust them off, others use an egg-washing machine or another method."

In 2014, in a six-month project funded by *Growing Forward 2*, Schneider and AF colleague Valerie Carney, a poultry research scientist, developed recommendations for the best way to clean eggs in a hatching operation. Since then, these have increasingly become standard practice, allowing producers to increase their hatch rate and reduce the need for antibiotics.

### Cleaning Method Comparison

These AF professionals began by surveying Alberta hatching egg producers on exactly how they clean their eggs. Of thirty such operations in the province, they received information from fifteen.

"Of fifteen hatching operations, we found that eleven different methods were being used," says Carney.

As she explains, each egg has thousands of tiny pores where bacteria can hide. Even though an egg may appear reasonably free of dirt, it could still harbor bacteria. A thin cuticle on the shell provides protection for the shell – and the chick inside – but if the cuticle is compromised, it could expose the chick to bacteria.

To determine which egg-cleaning method worked best, Carney and Schneider visited egg barns, gathered eggs, and cleaned them in the eleven different ways producers were using. They then sent the eggs to an AF lab for testing, to determine which cleaning method minimized bacteria most effectively.

### The Top Two

The most effective method was to use an egg-washing machine. These machines use water warmer than 42 degrees C, as water temperature was found to be significant in taking out



bacteria. At a cost of \$7,000 to \$8,000, an egg-washing machine is a significant investment, but one that, given what's at stake, more producers may consider making.

The second-most effective method was Clorox wipes. Considerably cheaper than the egg-washing machine, this method nonetheless did a good job. The active ingredient in the wipes is known to be benign for chicks.

In the next phase of this project, Schneider and Carney developed a range of printed information detailing which cleaning methods are preferable. You'll find their poster on many hatching barn walls, guiding workers through the correct process.

Schneider and Carney's findings have since been incorporated into technical materials published by both the provincial and national organizations that represent hatching egg producers.

Recently, AF conducted a survey of producers to ask whether the new egg-washing recommendations were being implemented. The survey indicated the procedures have been widely adopted in the industry.

Cleaner eggs means less chance for bacteria to develop, which in turn means healthier chicks and less need for antibiotics and the associated cost. To Schneider, this is a worthwhile dividend from a relatively simple change in management practices.

"One producer told us that washing eggs more effectively had increased his hatch by 1 percent," she says. "That's quite a difference and this project made that possible."

*Growing Forward 2* is a federal – provincial – territorial initiative.