International Poultry Production

Poultryhealth BYTES

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Egg dipping

Introduction

In mycoplasma control and in eradication programmes egg dipping plays an important role. In this process the eggs are immersed in an antibiotic solution, usually tylosin or gentamicin, in a special tank and the antibiotic solution is forced into the eggs by applying pressure. This is an off-label use of the antibiotic. Enrofloxacin is not recommended for this process.

The process

Obviously there is a variability in pore numbers per egg and as these are the route by which the antibiotic passes into the egg, antibiotic input (dose) will be variable. However, as there is a reasonable margin of safety when it comes to embryo toxicity with the drugs concerned this is not an issue as the equipment can be fine tuned so all eggs get the required dose, albeit that some may get a bit extra.

It is important to keep the antibiotic solution clean because any contamination getting into the solution will also get into the eggs. If this occurs, significant rot problems and losses can occur.

For this reason egg hygiene is very important and the antibiotic solution should be regularly passed through bacteriological filters. The Americans often add disinfectant to the dip solution.

All equipment such as pipes having contact with the antibiotic solution must be made from stainless steel as iron ions (rust) in solution greatly stimulates the growth and reproduction of pseudomonas bacteria – a common cause of rotten eggs.

The dipping solution

A significant volume is required so any unused solution can be held over for the next time. This should only be done after bacteriological filtration and under cool conditions. Bulk farm milk tanks are very good for this purpose.

The dipping solution should be regularly microbiologically checked to confirm that the bacteriological filtration is working and the solution should be regularly assayed to confirm the strength of the dipping solution.

Heat treatment for mycoplasma control

An alternative strategy was developed in Israel in which eggs were precisely heated to a specific temperature to eradicate mycoplasma. This process had two challenges – firstly the difference between the temperature that killed mycoplasma and that which killed embryos was not great and, secondly, there was the challenge of uniformly heating large numbers of eggs. This was overcome to some extent by designing special heating cabinets.