Real Time PCR Quantification and Differentiation of both Challenge and Vaccinal Mycoplasma gallisepticums trains Used in Vaccine Quality Control.

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ABSTRACT
Mycoplasma gallisepticum is an economically important pathogen of poultry worldwide, causing chronic respiratory disease in chickens and turkeys. Vaccination of poultry with Mycoplasma gallisepticum live vaccines is an approach to reduce susceptibility to infection and to prevent economic losses. The goal of this study was to develop an alternative method for evaluation of live and killed vaccine using quantitative differential real time PCR (rt-PCR) assay. Real time PCR assay was implemented for titration and identification of three types of 
Mycoplasma gallisepticum (F, ts-11 and field strain). Three groups of chicks were vaccinated by using F- strain, ts-11 and killed vaccine and the forth group was considered control. Challenge test was applied by using Mycoplasma gallisepticum field strain (10^8 CFU) at three weeks post vaccination. Antibody ELISA titers against Mycoplasma gallisepticum were 319, 259 and 1009 for F, t-11 and killed vaccine respectively at 3 weeks post vaccination. The protection rates were 81.5%, 74%, and 66.6% for F- strain, ts-11 and killed vaccine respectively that was determined by air sac lesion scrap. Using quantitative differential rt-PCR for necropsied birds at 5 days post challenge 7 days post challenge and 14 days post challenge demonstrated that the F-strain vaccine had ability to prevent shedding of field strain at 14 days post challenge mean while the ts-11 and killed vaccine decreased shedding of field strain from 10^8.1 and 10^8.6 to 10^5.1 and 10^5.8 CFU respectively at 14 days post challenge. In this study, rt-PCR had ability to identify and quantify of two types of vaccines (F and ts-11) and field strain.

**Keywords:** Mycoplasma, rt-PCR, Vaccine, Poultry

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ABSTRACT

The Effects of some Herbal Essential Oils against Salmonella and Escherichia coli isolated from Infected Broiler Flocks.


Effect of Cold Stress and Various Suitable Remedies on Performance of Broiler Chicken.

In this study, we have investigated the effect of essential oils extracted from five different herbal plants against Salmonella and Escherichia coli. Standard Disk-diffusion method, Minimum Inhibition Concentration and minimum bactericidal concentration were used to determine the potential harmful threat to human health has led to a need to find safe alternatives for the control of these bacteria. To this end, the use of herbal remedies in poultry has been suggested. The maximum inhibition zone in diameter against Escherichia coli and Salmonella spp are two bacterial infectious diseases responsible for heavy losses in the poultry industry. The inhibitory effect of these essential oils. Also, tetracycline was used as a control group. Among the essential oils, Carum copticum had the highest antibacterial properties. The maximum inhibition zone in diameter against control of these bacteria. To this end, the use of herbal remedies in poultry has been suggested.

Keywords: Carum copticum, Essential oil, Herbal plant, antibiotics resistance, Salmonella spp, Escherichia coli.