



## ABSTRACT

*Mycoplasma gallisepticum* (MG) is an important wall less bacteria. It is the cause of chronic respiratory disease in poultry. In laboratory, it is grown for production of antigen (as diagnostic) and vaccine for immunoprophylaxis against the disease. However, because of less growth of the bacteria, higher cost of the diagnostic and vaccine using static incubator, its high biomass production is a critical requirement. Physico-chemical factors affecting the in vitro biomass production of the bacteria such as temperature, pH, stirring speed or RPM, incubation time, cell density, different sera and sugars were optimized. Growth of MG was noted after 24, 48 and 72 hours of incubation using the optimum conditions, taking one ml culture at 37°C temperature, 7.8 pH, 130 shaking speed, 5% CO<sub>2</sub>, and Frey's medium in the shaking incubator. In most of experiments, the highest growth was observed under standard conditions. The bacterial growth after 24 hours of incubation, with significant difference of  $p \leq 0.05$  and the statistical mean OD value of  $0.295 \pm 0.003$ , after 48 hours of incubation period,  $0.443 \pm 0.003$ , and after 72 hours of incubation period, with the statistical OD mean value of  $0.575 \pm 0.003$  was found. Results were evaluated in SPSS 15.0 by one way ANOVA through Duncan's Multiple Range DMR post hoc setup with probability of  $p \leq 0.05$ . In the end an experiment was carried out to find the dry mass or PCV of MG.