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| **Study of Penetration of *Salmonella typhimurium* and *Proteus vulgaris* through Table Egg Shell Membranes at Various Temperatures** | | | | | | Research Title |
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| The study was conducted to evaluate the penetration rate of *Proteus vulgaris* and *Salmonella typhimurium* (individually and combined) through the shell membranes and egg contents at two different temperature levels: (incubator 37 ºC and refrigerator 4 ºC). A total of 120 brown eggs were collected from Baghdad markets from December 2010 to March 2011, and divided into three groups (40 egg for each), first group was exposed to 6.2**×**106 cfu/ml of *P. vulgaris*, the second group was exposed to 6.2 **×** 106 cfu/ml of *S. typhimurium*, and the third group was exposed to 6.2 **×** 106 cfu/ml of both.  Individually and/or combined *P. vulgaris* and *S. typhimurium* cells were survived on egg shells for 28 days at both 37 ºC and 4 ºC. Both *S.typhimurium* and *P.vulgaris* together reached the shell membrane and eggs' content within 7 days at 37ºC and 4 ºC, but *P. vulgaris* penetrate egg shell and egg content earlier within 7 days at both 37 ºC and 4 ºC, also *S. typhimurium* penetrate egg shell and contents within 7 days at 37 ºC , but it couldn't reach to the contents after 28 days at 4 ºC.  It could be concluded that the effect of storage temperatures at both 4 ºC and 37 ºC on the affinity of penetration via egg structures for 28 days was investigated in this research, thus their effect on public health and economic importance on consumers were shown to be evaluated and discussed.  **Keywords : *Salmonella typhimurium* , *Proteus vulgaris*, Eggshell penetration.**  **Keywords : *Salmonella typhimurium* , *Proteus vulgaris*, Eggshell penetration.** | | | | | | Abstract |