# 6. SUMMARY

This work was carried out to survey the ***Salmonella*** infection in broiler farms in Damietta governorate, serotype of ***Salmonella*** isolates by using slide agglutination test, evaluation of the role of the locally prepared killed ***S.* Enteritidis** bacterin for prevention of ***S.* Enteritidis** in broiler chickens and evaluation of the role of a commercial probiotic preparation in control ***S.* Enteritidis** infection in broiler chickens.

**Results can be summarized in the following points:**

1- Occurrence of ***Salmonellae*** among samples collected from 414 apparently healthy broilers (4 flocks) was 2.2%.

2- Occurrence of ***Salmonellae*** among samples collected from 157 diseased broilers (4 flocks) was 9.6%.

3- Occurrence of ***Salmonellae*** among samples collected from 502 dead broilers (4 flocks) was 3.4%.

4- The rate of ***Salmonellae*** isolated from total samples of each flock. It was 2.76%; 3.75%; 5.32% and 4.12% (Flocks 1, 2, 3 and 4 respectively).

5- ***Salmonella*** serotypes isolated from different samples, where 13 isolates of ***S.* Enteritidis** (31.7%); 8 isolates of ***S.* Infantis** (19.5%); 6 isolates of **S. Kentucky** (14.6%); 3 isolates of ***S.* Chiredzi** (7.3%); 7 isolates of **S. Typhimurium** (17.1%) and 4 isolates of **S. Tsevie** (9.8%).

6- ***S.* Enteritidis** was isolated from the three flocks, in a rate of 2.2%; 1.4% and 1.1%, ***S.* infantis** isolates were isolated (3 from flock 2 (1.02%) and 5 (1.9%) from flock 4), **S. Kentucky** isolates were isolated (3 (102%) from flock 2; 1 (0.53%) from flock 3 and 2 (0.75%) from flock 4, ***S.* Typhimurium** isolates were isolated (1 from flock 1 (0.3%); 4 from flock 3 (2.1%) and 2 (0.75%) from flock 4), ***S.* Chiredzi** isolates were isolated(1 from flock 1 (.3%) and 2 (.75%) from flock 4) and **S. Tsevie** isolates were isolated (1 from flock 2 (.3%) and 3 (1.6) from flock 3).

7- Vaccination by locally prepared bacterin and probiotic showed marked protection against ***S*. Enteritidis** infection.

8- Vaccination by locally prepared bacterin reduced the percent and duration of fecal shedding of the infect strain ***S*. Enteritidis**. No shedding ***S*. Enteritidis** was isolated at 3rd week.

9- Probiotic decrease fecal shedding much better than positive control group.

10- Vaccination showed marked protection against colonization of the infect strain in the internal organs, was better than positive control group.

11- Probiotic decreased ***S*. Enteritidis** isolation of the infect strain from all internal organs.

12- Vaccinated group and probiotic treated group improve body weight gain, cumulative feed conversion (CFC) and EPEF, were better than positive control group.

13- Serological responses in a microagglutination test were higher in vaccinated group (prepared bacterin) increased up to 80% at 1:1280 before infection, and become to 70%, 60%, 60% at 1st ,2nd ,3rd weeks respectively post infection.

14- Serological responses in a microagglutination test were in probiotic group increased to up to 70% at 1:320 before infection, and become to 70%, 50%, 40% at 1st , 2nd , 3rd weeks respectively post infection.

15- The mean absorbance value increased from value at pre-vaccination before booster dose (10 days old), after booster dose and before infection (20 days old), 27, 34 and 41 days of age in probiotic treated group better than positive control group.

16- In vaccinated group with the locally prepared killed ***S*. Enteritidis** bacterin, mean absorbance value increased at pre-vaccination, before booster dose , after booster dose (10 days old), before experimental

infection (20 days old), 27, 34 and 41 days of age much better than positive control group.

Generally we can conclude that the locally prepared killed ***S.* Enteritidis** bacterin conferred good protection against feacal shedding and internal organ colonization which would result in reducing pollution of the poultry environment and reducing the incidence of human infection

Reduction but not elimination of ***Salmonella*** colonization by vaccination highlights the importance of vaccines as complementary tools and not substitutes of integral biosecurity programs to control ***Salmonella*** in poultry.