Chapter 6

Conclusion

Among 1200 isolated strains from 120 chickens, which changed the media color around colony to yellow

390 strains are from Northern region, 260 strains are from North eastern region, 200 strains are from Middle region and 350 strains are from Southern region.

548 strains were representative gram positive and 242 strains were catalase negative.

116 strains resisted to bile salts, whereas 19 strains survived at pH 2 – 10.

3 strains utilized protein, starch and fat.

These 3 strains had also antibacterial activity to *Escherichia coli* and *Salmonella typhimurium*.

All bacteria strains were further identified by the 16S-rDNA as *Enterococcus faecalis* CMU-FP001, *Lactobacillus plantarum* CMU-FP002 and *Enterococcus faecalis* CMU-FP003.

The improvement of body weight of broilers was consistent in all probiotics fed groups ($p<0.05$) while feed intake was not differing ($p>0.05$).

Enterococcus faecalis CMU-FP001, *Lactobacillus plantarum* CMU-FP002 and *Enterococcus faecalis* CMU-FP003 show 9.97, 10.39 and 9.01 percent increase in average daily gain, respectively as compared to control with no significance on feed consumption ($p>0.05$).

Feed Conversion Ratio and Feed Efficiency had a significant difference ($p<0.05$) which broiler fed with both probiotics group 2 (*Lactobacillus plantarum* CMU-FP002) and probiotics group 3 (*Enterococcus faecalis* CMU-FP003). Anyway highly significantly higher HI titer for Newcastle Disease was shown in broiler fed - probiotics *Lactobacillus plantarum* CMU-FP002 which HI titer 7 day post secondly vaccinated ranged from 1:16 to 1:128 with average HI titer 87.11 ± 50.031.

Oocyst shedding had a significant difference ($p<0.05$) which broiler fed probiotics *Lactobacillus plantarum* CMU-FP002 slightly lower than control but no difference from antibiotic ($p>0.05$), effect on caecal tonsils and bursa of Fabricius were observed. Enhanced humoral immunity was found in Probiotics *Lactobacillus plantarum* CMU-FP002 group but not clearly as same as enhance cellular immunity. But Probiotics *Lactobacillus plantarum* CMU-FP002 group showed some evidence in anti-coccidia antibody, IFN-ν and IL-2 level that they could enhance well in intestinal wash than in serum or lymphocyte supernatant. This result might be confirmed that Probiotics *Lactobacillus plantarum* CMU-FP002 have been shown to play an

important role in protecting broiler from *Eimeria tenella* by several mechanisms during infection especially by local immunity.