

CHAPTER 5

CONCLUSIONS

Lactic acid bacteria are present in many fermented fruit and vegetable products can inhibit other microorganisms through competitive for nutrients and production of antimicrobials, such as bacteriocins.

LAB are able to produce a large variety of compounds which give fermented food their characteristic flavor and color, and improved safety in food.

The aim this review; screening of bacteriocin – producing lactic acid bacteria from 10 kinds of fermented vegetable and fruit products. (pickled green cabbage, bamboo shoot, soybean, wild spider flower, chinese radish, garlic, *Camellia oleifera*, spanish plum, santol and mango).

We found that Twenty-six of 47 isolates observe LAB were produce antimicrobial substance against the four indicator microorganisms, *Escherichai coli* TisTR73, *Salmonella enteritidis*, *Bacillus cereus* and *Staphylococcus aureus*. A total of 26 isolated were recorded as positive, producing inhibition clear zones on agar media. Ten isolates inhibited all of four indicator microorganisms, Thirteen isolates inhibited 3 indicator microorganism and three isolates inhibited 3 indicator microorganism.

The able to inhibited 4 indicator microorganism, of the antimicrobial compound produced by these bacteria isolates by using paper disc diffusion assay. These isolate presented a inhibitory spectrum scince they were able to inhibit many of the inhibitor microorganism test.

For agar well diffusion assay showed that 7 isolates were sensitive to 0.5 g/ml (w/v) β -glycerophosphate after added to the concentrated of supernatants from thos 26 isolates, while 19 isolates were not sensitive to 0.5 g/ml (w/v) β -glycerophosphate. That

means the potential to inhibit the indicator microorganisms of these 19 isolates are the result of lactic acid. Thus, it was possible that the others 7 isolates are bacteriocins producing microorganism. Then proteinase K and β -glycerophosphate were added to the reaction. It was found that 2 isolates FC4-01/1 and FC4-01/4 were bacteriocin which able to inhibited all of indicator microorganisms. Moreover isolate FC6-01/2 was bacteriocin could inhibited *Salmonella enteritidis* and *Staphylococcus aureus*. Furthermore three isolates were heatresistant bacteriocins.

Identification of LAB from fermented vegetable and fruit products by biochemical test, we found that three isolates were identified as *Lactobacillus* sp.

16S-rRNA sequence analysis of 3 isolates; isolate FC6-01/2 showed 100% similar to *Lactobacillus plantarum*; isolate FC4-01/1 showed 99% similar to *L. plantarum* and isolate FC4-01/4 showed 99% similar to *L. plantarum*.