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The Effects of Urea and Calcium Chloride on Urease Activity in *Lysinibacillus fusiformis* U1 and *Sporosarcina pasteurii* ATCC 6453

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Aim of the study: This study aimed to determine effect of urea and calcium chloride on urease enzyme activity in ureolytic *Lysinibacillus fusiformis* U1 and *Sporosarcina pasteurii* ATCC 6453. Thus, the effect of urease enzyme activity on bacterial soil improvement will be learned.

Material and Methods: For this purpose, three different media (LB, LB-urea, calcium precipitation medium(CPM)) were used in our study to determine the effect of urea and calcium chloride on urease enzyme activity. While LB medium does not contain urea and calcium chloride, LB-urea medium does not contain calcium chloride. Bacteria were incubated at optimum temperatures in these 3 different media. Then, urease enzyme activity was determined by phenol-hypochlorite method.

Results: Urease enzyme activities of bacteria in LB medium are as follows; *Lysinibacillus fusiformis* U1 520.741 nmole/min/mg and *Sporosarcina pasteurii* ATCC 6453 2137.869 nmole/min/mg. The activities in LB-urea medium are *Lysinibacillus fusiformis* U1 1760.911 nmole/min/mg and *Sporosarcina pasteurii* ATCC 6453 3966.600 nmole/min/mg. Finally, urease enzyme activities in CPM are *Lysinibacillus fusiformis* U1 2373.772 nmole/min/mg and *Sporosarcina pasteurii* ATCC 6453 2524.006 nmole/min/mg.

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