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Isolation and screening of potential antibiotic producing bacteria from soil

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The current study was carried out to isolate antibiotic producing bacteria from soil which provides a perfect residence for diverse microbial interactions, including the antagonism phenomenon, which leads to the production of antibiotics or metabolites by one organism that inhibit another organism. Antibiotics, which are a significant discovery in history, have been used as therapeutic drugs in treating infectious diseases. Bacteria are easy to isolate, culture, and maintain, and to improve the strain. Thus the isolation of soil bacteria was carried out by using three culture media: nutrient agar which was used to isolate bacteria, while starch casein agar and glycerol arginine agar were used to isolate slow growing bacteria like Actinobacteria. Screening was done by using some common opportunistic pathogens (*S. aureus*, *B. subtilis*, *P. aeruginosa*, *E. coli*). Bacterial isolates were tested for antibiotic production against these standard cultures via cross streak screening method and spot inoculation method. Six bacterial isolates were successfully isolated by the cross streak screening method while only two bacterial isolates were isolated through the spot inoculation method. As screening for antibiotic producers is a tedious and time consuming process, isolation of antibiotic producers demands effective rapid screening methods. According to this study it is evident that more promising results can be obtained by the cross streak method than the spot inoculation method. Also this study further suggests that the genus *Pseudomonas* has a significant potential to synthesize antibiotics.

Keywords: Soil bacteria, Antibiotics, *Pseudomonas*

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