巴克素對土壤細菌相影響之研究

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摘 要

Paclobutrazol (PP333) 是一種植物生長調節劑，主要抑制gibberellin acid (GA) 的生合成，應用於農業上，如抑制營養生長和增加作物的產量。若過量應用，Paclobutrazol 會累積於土壤中並抑制作物生長。本研究收集 Paclobutrazol 處理過的農業土壤，以變性梯度凝膠電泳 (DGGE) 比較土壤經 Paclobutrazol 處理後細菌菌相的變化。土壤樣品採集自芒果和蓮霧果園 (南台灣) 之Paclobutrazol 污染土和正處理中的花生田 (中台灣)，萃取土壤中細菌 DNA 並進行 PCR 擴增 16S rRNA 基因片段及純化步驟，以DGGE 技術分析 16S rRNA 基因片段，進一步將 DGGE bands 純化、DNA定序和建構親緣關係樹，顯示出芒果和蓮霧的菌相不同於花生土壤中的菌相。另外研究土壤以 Paclobutrazol 處理，連續三期，收集每期土壤樣品，萃取土壤中細菌 DNA 並進行 PCR 擴增及純化步驟，再以 DGGE 分析土壤中細菌菌相的變化，顯示土壤中細菌多樣性會隨著 Paclobutrazol 處理而減少。目前還未篩選出具有可分解 Paclobutrazol 的菌株，但由親源關係樹中，大致發現以 Proteobacteria 在土壤中佔大部分，且污染土較未污染土減少33% 的細菌多樣性。

關鍵詞 : 巴克素、變性梯度凝膠電泳、細菌多樣性、農業土壤

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