INVESTIGATION OF CEC TOLERANCE OF BIOCONTROL BACTERIAL ISOLATES

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Contaminants of Emerging Concern (CECs) are chemicals and toxic materials detected in water bodies that may pose ecological or human health impacts and are not yet regulated. This study evaluated the tolerance of various biocontrol bacterial isolates to a mixture of common pharmaceutical residues and pesticides (CEC mix), including diclofenac sodium, bezafibrate, losartan, furosemide, carbamazepine, propranolol, ranitidine hydrochloride, atenolol, famotidine, sotalol hydrochloride, acetaminophen, hydrochlorothiazide, salbutamol, omethoate, trichlorfon, dimethoate, acetamiprid, phosphamidon, carbofuran, carbaryl, methidathion, linuron, malathion, ethoprophos, tebuconazole, propiconazole, methamidophos, imazalil, and diazinon. Six isolates were tested, including strains applicable as soil inoculants, foliar biocontrol agents, and strains suitable for industrial mushroom cultivation. These isolates represented the genera *Bacillus*, *Pseudomonas*, and *Arthrobacter*. CEC tolerance was assessed in microplates using a microdilution method, with concentrations ranging from 0.5 µg/ml to 0.003125 µg/ml. Tolerance levels were determined based on OD_{620} measurements after 24 to 48 hours of incubation. All tested strains exhibited tolerance to CECs, although the degree of tolerance varied among isolates. Among the tested strains, the SZMC 25872 *Pseudomonas resinovorans* isolate exhibited the highest level of CEC tolerance. Current investigations focus on evaluating pharmaceutical and pesticide tolerance separately. Future work will involve applying analytical methods to assess the degradation capabilities of the isolates for pharmaceuticals and pesticides.

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