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Carrot: A Possible Source of Multidrug-Resistant Acinetobacter Transmission

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Abstract : The research wish to investigate the occurrence of multidrug- resistant Acinetobacter, in carrot and estimate the role of carrot in its transmission, in a rapidly growing urban population. Thus, 50 carrot samples were collected from Jakara wastewater irrigation farms and analyzed on MacConkey agar and screened by Microbact 24E (Oxoid) and susceptibility of isolates tested against 10 commonly used antibiotics. Acinetobacter baumannii and A. lwoffii were isolated in 22.00% and 16% of samples respectively. Resistance to ceporex and penicillin of 36.36% and 27.27% in A. baumannii, and sensitivity to ofloxacin, pefloxacin, gentimycin and co-trimoxazole, were observed. However, for A. lwoffii apart from 37.50% resistance to ceporex, it was also resistant to all other drugs tested. There was a similarity in the resistant shown by A. baumannii and A. lwoffii to fluoroquinolones drugs and β- lactame drugs families in addition to between sulfonamide and animoglycoside demonstrated by A. lwoffii. Interestingly, when resistant similarities to different antibiotics were compared for A. baumannii and A. lwoffii as a whole, significant correlation was observed at $P < 0.05$ to CPX to NA (46.2%), and SXT to AU (52.6%) respectively, and high multi drug resistance (MDR) of 27.27% and 62.50% by A. baumannii and A. lwoffii respectively and overall MDR of 42.11% in all isolates. The occurrence of multidrug-resistance pathogen in carrot is a serious challenge to public health care, especially in a rapidly growing urban population where subsistence agriculture contributes greatly to urban livelihood and source of vegetables.

Keywords : urban agriculture, public health, fluoroquinolone, sulfonamide, multidrug-resistance
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