

An investigation on epiphytic bacteria of pistachio nut trees in certain pistachio growing areas of Iran

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Mesophilic heterotrophic, aerobic or facultatively anaerobic bacteria that grow on yeast tryptone glucose extract agar were isolated from the surface of olive leaves of 3 or 4 different ages in January, April, July, and October from 1997 to 1999. Unweighted average linkage cluster analysis on either the Jaccard coefficient or the simple matching coefficient recovered 701 representative strains in 44 phenons defined at the 70% and 80% similarity level, respectively. Of these, 25 were identified to genus or lower level. From the identity of the representative strains, the frequency of occurrence among the phylloplane bacteria over the 6-year period was estimated at 51% for *Pseudomonas syringae*, followed by *Xanthomonas* sp. (6.7%), *Pantoea agglomerans* (6%), *Acetobacter aceti* (4.7%), *Enterobacter cloacae* (4.3%), *Pseudomonas fluorescens* (3.9%), *Bacillus megaterium* (3.8%), *Bacillus subtilis* (0.57%), *Bacillus* sp. (0.29%), *Flavobacterium* sp. (0.27%), *Burkholderia cepacia* (0.08%), and *Pseudomonas aeruginosa* (0.04%). Bacterial communities on leaves of a given age at a given time during any one year displayed a very similar structure but differed significantly from those on the leaves of the same age at a different time or on the leaves of a different age at any time during any one year. Communities on the leaves of a given age at a given time of the year were invariably dominated by one or another of only 9 taxa, which accounted for 22 to 98.5% of the isolates from those leaves. The communities on 10- and 13-month-old leaves were invariably made up of fewer taxa than those on younger leaves at the same time of the year.