Verticillium wilt (VW) caused by *Verticillium albo-atrum* Reinke & Berthold and *V. dahliae* Klebahn, is a widespread disease in many parts of the world causing usually substantial damage. In Tunisia, *V. dahliae* is the predominant species and has been obtained from different plant species. A collection of 91 *V. dahliae* isolates were used for race typing analysis using the root-dipping technique. Classification of isolates to races was attempted by examining their pathogenicity on two differential tomato cultivars cvs. Ventura (lacking the *Ve* resistance gene) and Rio Grande (possessing the *Ve* gene). Of these 91 isolates, 51 obtained from different hosts: tomato (44), potato (2), melon (2), artichoke (2) and olive tree (1) were typed as race 2. The other 37 isolates obtained from tomato (29), potato (4), eggplant (2), artichoke (1) and olive tree (1) were typed as race 1. The remaining 3 isolates from tomato (2) and potato (1) proved non-pathogenic to tomato. Moreover, variation in aggressiveness towards both tomato cultivars was apparent among isolates of *V. dahliae* race 2, via the index of leaf damage and plant stunting. Furthermore, the behavior of tomato cultivars possessing the *Ve* gene, most grown in Tunisia, against selected isolates of *V. dahliae* race 2 was assessed. Under controlled conditions, these cultivars exhibited varying degrees of susceptibility to VW ranging from moderate to high as measured by leaf damage index and plant stunting. When grown in a soil naturally infested by *V. dahliae* race 2, VW incidence was 100% for all the resistant cultivars tested, four months post-planting. The extent of vascular discoloration occasioned by VW reached and even exceeded the half of stem height for some cultivars.

We can conclude that artichoke is considered as a new host of race 2 in the world, whereas potato, melon and olive tree are known hosts of it reported in Tunisia. This suggests that these hosts which are potential reservoirs for both *V. dahliae* races should not be in any case considered in a rotation sequence, especially where tomato follows these crops. Race 2 is now present in three coastal regions (Sousse, Monastir and Nabeul) where vegetable growing is widespread. These results highlight the urgent need of tomato genotypes with useful levels of resistance to *V. dahliae* race 2. The combined use of these genotypes with other control measures such as solarisation, green manures, grafting and biological control may be efficient in controlling this disease.