XIII EUCARPIA MEETING ON CUCURBIT GENETICS AND BREEDING

3 - 6 NOVEMBRE 2024

VICO EQUENSE (NA) - ITALY

ABSTRACT BOOK

P.1.4

Screening of cucurbits for resistance to *Neocosmospora falciformis* and genetic variation of *N. falciformis* isolates associated with Fusarium wilt disease in cucurbits.

Ana Garcés-Claver[1,2], Oreto Fayos[1,2], Carmen Julián[1,2], R. Val[1], E. Sales[3], Wahida Gondi[4], Hela Chikh-Rouhou[4], Vicente González[1]

[1] Centro de Investigación y Tecnología Agroalimentaria de Aragón (CITA). Avda. Montañana, 930. 5059, Zaragoza, Spain.

[2] Instituto Mixto Agroalimentario de Aragón - IA2. CITA-Universidad de Zaragoza. C. de Miguel Servet, 177. 50013, Zaragoza, Spain.

[3] Escuela Politécnica Superior. Universidad de Zaragoza. Ctra. de Cuarte, s/n, 22197, Huesca, Spain

[4] Regional Research Centre on Horticulture and Organic Agriculture, LR21AGR03, University of Sousse. 4042, Sousse, Tunisia.

Cucurbits, especially watermelon (*Citrullus lanatus* (Thunb.) Matsum. and Naka) and melon (*Cucumis melo* L.), are of great economic importance in Spain. Pests and diseases are one of the main limiting factors for these crops. Diseases caused by soilborne phytopathogenic fungi are particularly important, highlighting the severity of symptoms caused by Fusarium wilt, such as vascular wilt and root rot. In Spain, *Neocosmospora falciformis* (*Fusarium falciforme*), a member of the Fusarium Solani Species Complex (FSSC), has been one of the predominant species in Fusarium wilt infection of cucurbits in recent years. Preliminary results have shown that this pathogen causes lesions in the genus *Cucumis*, *Citrullus*, and *Cucurbita*. In order to search for natural sources of resistance for the development of resistant varieties to help control this disease, a collection of 37 accessions belonging to different cucurbit species was screened. For the evaluation, artificial inoculations were carried out by root dipping of seedlings. Response to inoculation was assessed using a visual symptom scale from 0 (no symptoms) to 4 (dead plant). Most of the accessions evaluated were susceptible and only three accessions showed very few symptoms. On the other hand, given the limited information currently available on *N. falciformis*, a study of the genetic diversity of a collection of 38 cucurbit-associated isolates obtained in previous sampling surveys in 10 Spanish locations was carried out. Twelve ISSR (Inter Simple Sequence Repeats) primers were used for this study, generating a total of 247 amplification products, 97% of which were polymorphic. A high genetic variability was found among the isolates, but the dendrogram obtained did not show a clear grouping according to the geographical origin of the isolates or to host species.