

The Jordanian isolate of tomato yellow leaf curl virus has a narrow host range restricted to a few solanaceous plants. Severe symptoms developed on tomatoes and *Datura stramonium*, whereas *Nicotiana glutinosa* and *N. tabacum* cvs Samsun and Havana 423 were infected without showing symptoms. The whitefly *Bemisia tabaci* is an efficient vector; a single whitefly was able to transmit the virus. The minimum acquisition and inoculation feeding periods were 60 and 30 min, respectively, and the latent period was 20–24 h. The virus was retained by *Bemisia tabaci* for 11 days. The host range and virus vector relationships of the Jordanian isolate are reported for the first time.