Identification of Cuscuta Campestris Yuncker in UAE: Study of Bar Code Loci- RBCL, MATK and TRNH-PSBA in the UAE and Egyptian Cultivars and In Their Respective Host Plants Basil and Jute

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***Abstract*—Cuscuta campestris is a stem holoparasite. We observed Cuscuta parasite on basil host plant Ocimum basilicum, in Al Mohadub Umm Al Quwain, UAE. The parasite was pale green in color, twined around the host in anti-clock wise direction, with white flowers that had green ovaries at maturity. Based on the morphology and floral structures, we identified the parasite as C. campestris Yuncker. To authenticate the species, three "Bar-code loci" viz, rbcL, matK and inter-spacer region trnH-psbA were studied. A portion of rbcL locus and the trnH-psbA non-coding spacer region seem to be intact, revealed by PCR amplification and sequencing, while three sets of primers failed to amplify the maturase K locus. Although the stem and floral structures were light green in color, RuBisCo protein could not be detected in polyacrylamide gels, indicating its total dependency on the host at that stage of development. To validate thus obtained results, frozen samples of C. campestris were collected from Egypt and the three bar code loci (rbcL, matK and trnH-psbA) were amplified with the same set of primers; the PCR products were sequenced. There was 100% similarity with respect to the sequenced loci (rbcl and trnH-psbA) between the two cultivars of C. campestris Yuncker. Sequences were deposited in Genbank with accession numbers KXO15762 (C. campestris, UAE) and KXO15761 (C. campestris, Egypt). C. campestris is being reported for the first time from Al Mohadub Umm Al Quwain, UAE. There is no difference in both the candidate bar code gene loci rbcL and trn-HpsbA between the UAE and Egyptian cultivars of Cuscuta campestris and the region is conserved.**

Key words: **Cuscuta campestris, rbcL, matK and trnH-psbA.**

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