

ERWINIA CAROTOVORA: AS A PATHOGEN OF SUNFLOWER IN PAKISTAN

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A stalk rot bacterial pathogen of sunflower (Helianthus annuus L.) characterized by smaller or large oilspots in olive greenish or black colour was observed in hybrid NK-212 at Daska (Sialkot district) and in experimental plots of sunflower at the National Agricultural Research Centre, Islamabad, during summer, 1987. Koch's postulates were satisfied with the bacterium that caused stalk rot in sunflower. Bacterial cells were gram negative, short and thick rods with rounded ends. The bacterium produced acid from galactose, glucose, xylose, mannose, saccharose, glycerine, lactose, maltose and melibiose within 72 h. On arabinose, dextrin, starch and dulcitol no acid was formed. It was catalase positive, oxidase negative, B-galactosidase positive, citrate positive, gelatin positive and negative for arginine dihydrolase, lysine decarboxylase, ornithine decarboxylase, H₂S, urease, tryptophan deaminase, nitrate, indole, Voges-Proskauer. Slices of carrot and potato developed typical symptoms of softening and rotting 48 h after inoculation. The pathogen was identified as Erwinia carotovora Jones, on the basis of biochemical, physiological and pathogenicity tests. This is believed to be the first identification of E. carotovora on sunflower in Pakistan.