Presence of Fusarium wilt, incited by *Fusarium oxysporum* f.sp. *lactucae*, on lettuce in France.

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Lettuce (*Lactuca sativa* L.) is an important crop for fresh consumption. In summer 2016, wilting of 33-day-old plants of the Batavia-type lettuce cv. Toubillon was observed on a farm in Nice, France. Disease incidence on plants grown in protected plastic tunnels, was ~15 to 40% with a yield loss of up to 50%. Affected plants were stunted, and developed yellow leaves with orange discoloration in the vascular tissue. Diseased crown and stem tissues were surface disinfested for 1 min in 1% NaOCl, rinsed in sterile water, placed on potato dextrose agar (PDA) amended with 250 mg/liter of streptomycin sulfate, and incubated at 23°C. A fungus was consistently and readily isolated from symptomatic tissue, showing dense, cottony, thick, floccose mycelia with purplish to white pigmentation. The isolate Fol 8/16 produced pale orange sporodochia eighteen days after inoculation of carnation leaf agar (CLA) medium. Macroconidia were straight to slightly curved, with 3-septa, hook-like apical cell and pointed foot-shaped basal cell and measured 20.3 to 36.9 (28.1 average) × 2.9 to 4.5 (3.3 average) µm. Microconidia produced from short monophialides in false heads, were oval, and measured from 4.9 to 11.6 (8.3 average) × 2.1 to 3.7 (2.9 average) µm. Chlamydospores were mostly singles, terminal and intercalary, rough walled, and measured 5.5 to10.2 (average 8.1) µm. Such characteristics are typical of *Fusarium oxysporum* (Leslie and Summerell 2006). DNA from a monoconidial isolate (Fol 8/16) was extracted using E.Z.N.AFungal DNA mini kit (OMEGA Bio-Tek, Norcross, GA, USA). A PCR reaction was carried out to amplify the elongation factor 1-alpha (EF-1α) using the primers EF1/EF2 (O'Donnell et al. 1998). The PCR products were purified and sequenced by Macrogen Europe (The Netherlands) in both directions. Contig was obtained using DNA Baser programme (Heracle BioSoft SRL, Romania) and the sequence was analysed using BLASTn obtaining 100 % similarity with the isolate *Fusarium oxysporum* f. sp. *lactucae* with GenBank accession number DQ837657. The sequence was deposited (GenBank accession number number KY009875). Pathogenicity tests were carried out on 25-day-old plants of cv. Tourbillon. Forty plants were inoculated by dipping roots in a 1×10^6 CFU/ml suspension of isolate Fol 8/16. Inoculated and noninoculated plants were transplanted into four pots (10 plants/pot) filled with 12 L of steamed potting mix (peat/perlite/sand, 60:20:20 vol/vol) and maintained in a glasshouse at 28 to 30°C. Wilt symptoms and vascular discoloration of the crown and veins developing in 15 days. Thirty

days after inoculation 80% of the inoculated plants were dead, while all noninoculated plants remained healthy. The pathogenicity test was conducted twice with the same results. A fungus morphologically identified as *F. oxysporum* was consistently isolated from all the symptomatic plants. No colonies developed from reisolations from non inoculated control plants. This is the first report of Fusarium wilt of lettuce in France, where it is restricted to a few farms. In Europe this disease was first reported in Italy (Garibaldi et al. 2002). The presence of lettuce Fusarium wilt in France should stimulate efforts to prevent its spread to other lettuce production areas.

References:

(1) Garibaldi A, et al. 2002. Plant Disease, 86: 1052

(2) Leslie J. F. and Summerell B.A. 2006. The Fusarium Laboratory Manual, Blackwell Professional, Ames IA.

(3) O'Donnell K., et al. 1998. Proc Natl Acad Sci., 95: 2044-2049.