

Differential Sets

Fusarium oxysporum f. sp. *lactucae* (Fol) – Lettuce

Differential host	Fol: 1*	Fol: 2*	Fol: 3	Fol: 4*
Gisela	S	S	S	S
Ballerina	S	S	S	IR**
Patriot	S	S	S	IR**
Costa Rica No 4	HR	S	S	S
Romabella	HR	HR	S	IR
Lomeria	S	HR	HR	HR
Palmos	HR	S	IR	HR

S = susceptible; HR = highly resistant; IR = intermediately resistant

*Differential hosts and isolates that are used by the seed sector

**Ballerina and Patriot are both important due to their use as reference controls representing different levels of intermediate resistance. Ballerina has a stable IR level while Patriot has a higher IR level but a more variable response and should therefore always be included in a test as control. Moreover, they can be important for the characterization of future isolates.

ISF EG DRT organized two ring tests for validation of races and differentials. Results showed that:

- Races 1, 2, 3 and 4 were validated on the differentials.
- Race 3: It is important to create optimal test conditions to achieve expected susceptible results.
- Race 4: isolate 04750888 from Gilardi et al. (2017) was selected as representative of type Fol: 4.

References:

Fujinaga, M., Ogiso, H., Tsuchiya, N., Saito, H. (2001). Physiological specialization of *Fusarium oxysporum* f.sp. *lactucae*, a causal organism of Fusarium root rot of crisp head lettuce in Japan. J.Gen.Plant Pathol. 67:205-206.

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Fujinaga, M., Ogiso, H., Tsuchiya N., Saito, H., Yamanaka, S., Nozue, M., Kojima M. (2003). Race 3, a new race of *Fusarium oxysporum* f.sp. *lactucae* determined by a differential system with commercial cultivars. J.Gen.Plant Pathol. 69:23-28.

Fujinaga, M., Ogiso, H., Shimohara, H., Tsushima, S., Nishimura, N., Togawa, M., Saito, H., Nozue, M. (2005). Phylogenetic relationships between the lettuce root rot pathogen *Fusarium oxysporum* f.sp. *lactucae* races 1,2 and 3 based on the sequence of the intergenic spacer region of its ribosomal DNA. J.Gen.Plant Pathol. 71: 402-407.

Gilardi, G., Franco Ortega, S., van Rijswijk, P. C. J., Ortu, G., Gullino, M. L. and Giribaldi, A. (2017). A new race of *Fusarium oxysporum* f. sp. *lactucae* of lettuce. Plant Pathol. 66, 677-688. Doi: 10.1111/ppa.12616.

Perrot, S., Sérandat, I., Orgeur, G., Grimault, V., Pel, M. and Georges, E., 2022. Lettuce *Fusarium oxysporum* f. sp. *lactucae*, evolution of knowledge. 31st IHC 2022 Congress, Angers, 14-20 August 2022.

You can find the final report at <https://worldseed.org/document/isf-final-report-foI-race-4-lettuce/>

Protocol

CPVO. See <http://www.cpvo.europa.eu/> for a protocol on disease resistance testing

For more information contact the ISF Secretariat at isf@worldseed.org

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