

STUDY OF THE TUBER TRANSMISSION OF STOLBUR PHYTOPLASMA

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COST Meeting, Stiges, 1 February 2010

Introduction

Potato Stolbur phytoplasma in seed potato is on the EPPO quarantine list (AII)

Little is known on tuber transmission of Stolbur. Only a few and contradictory data can be found in the literature.

Transmission of Potato Stolbur (16SrXII-A) phytoplasma through potato tubers was published by Paltrinieri, 2007.

At Fitolab (HU) study has started to determine the infection rate of Stolbur phytoplasma tuber transmission in a sensitive variety.

Materials and Methods

Plant material:

118 tubers of variety Lady Rosetta originating from Stolbur infected potato field of Romania were planted in April 2009 and kept in an isolated plant growth room, under controlled climatic conditions

Visual inspection: reading of symptoms was regularly performed

Samplings for molecular tests: four times

- tubers
- plants at 3 dates during the growing season

Molecular tests: universal phytoplasma primers (P1/P7, R16F2n/R16R2) were applied in the PCR, followed by RFLP (Tru1I) analysis for identification of phytoplasma

Results - Tubers symptomatology

Tubers: 20% spongy appearance and hairy sprouting



Results - Plant symptomatology

- after germination the plants were grown weakly and looked stunted, but after one month, in most cases the shape and vigour of the plants turned to normal



Results - Plant symptomatology

- first phytoplasma symptoms appeared at the middle of the season: purple top, yellows and leaf rolling



Results - Molecular tests

Tubers:

- 118 tubers, selected for planting, were tested right before planting
- 73% of the tubers proved positive for Stolbur

Plants:

- 3 samplings were done, but the number of plants had been decreasing due to wilting of plants
 - 1 / 58 plants (remained alive) Stolbur phytoplasma was identified at the 2nd and 3rd sampling dates.
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Conclusions

Based on this result the tuber transmission of Stolbur can be assumed in case of Lady Rosetta variety however in a very low percentage.

Further experiments have to be performed:

- to refine and confirm these data,
 - to determine the pathogen(s) causing the wilting and
 - study their eventual influence on the phytoplasma transmission.
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Thank you for your attention!
