



INFLUENCE OF ROOTSTOCKS ON WINTER-HARDINESS OF PLUM GENERATIVE BUDS DURING WINTERING PERIOD IN TWO GROWING REGIONS

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The aim of the investigation was to evaluate the influence of different rootstocks on the viability of flower buds during winter for two plum cultivars in two growing regions.



MATERIALS AND METHODS I

Cultivar '**Kubanskaya Kometa**'



Cultivar '**Victoria**'



Orchards were planted in 2001 at
Pūre Horticultural Research Centre (Latvia)

Polli Horticultural Research Centre (Estonia)

Clonal rootstocks:

'St. Julien A', 'GF8/1',
'Brompton', 'GF655/2',
'Ackermann', 'G5/22',
'Pixy', 'Hamyra'

Seedling rootstocks:

'St Julien INRA2', 'Wangenheims Zwetsche',
'St.Julien d` Orleans', 'St.Julien Wädenswill',
'Myrobalan', 'Brompton',
'St.Julien Noir', *P. cerasifera var divaricata*



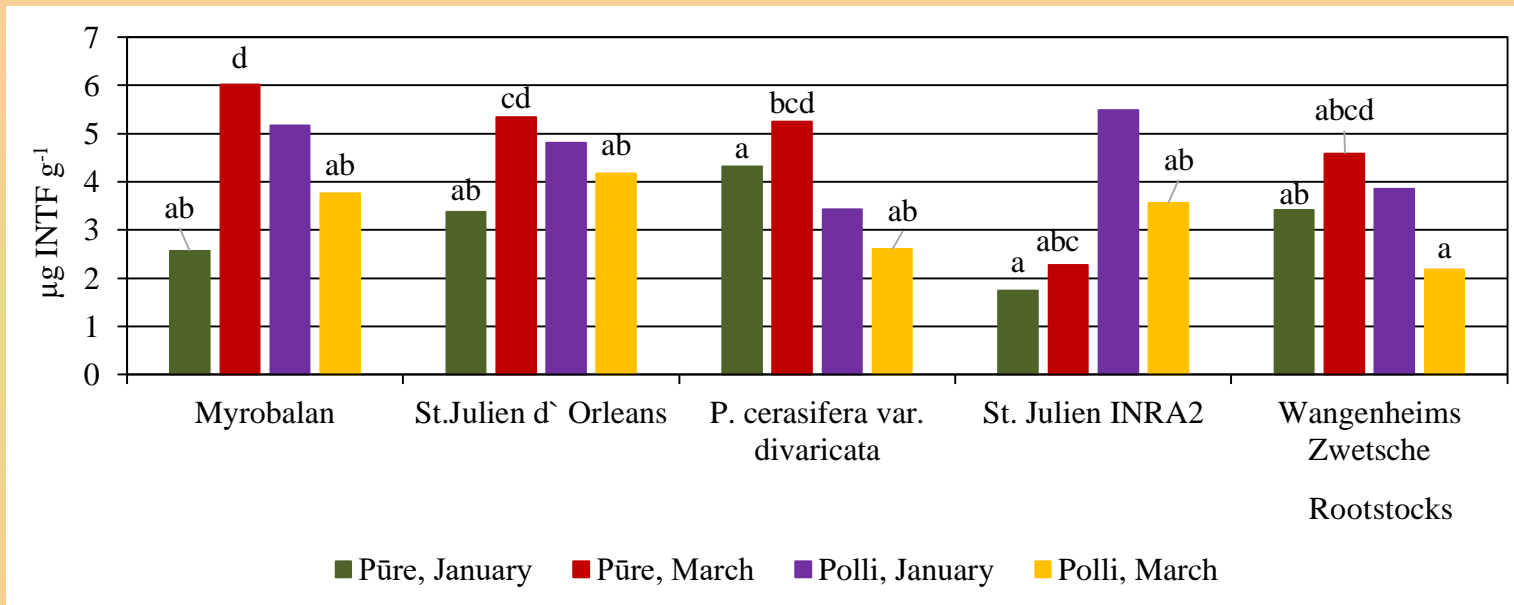
MATERIALS AND METHODS II



- Bud samples were taken two times during wintering period: at the end of January and March.
- The viability of flower buds and flowering intensity were determined at laboratory of University of Life Sciences and Tehnologies.
- The viability was determined by using triphenyltetrazole chloride (0.5%), where, in living cells, the colorless substance due enzymatic activity turns into a brightly coloured product – formasan. The optical density of colour was determined with a spectrophotometer at 485 nm.



Cultivar - rootstock combinations with the highest flower buds dehydrogenase activity for the cultivar ‘Kubanskaya Kometa’

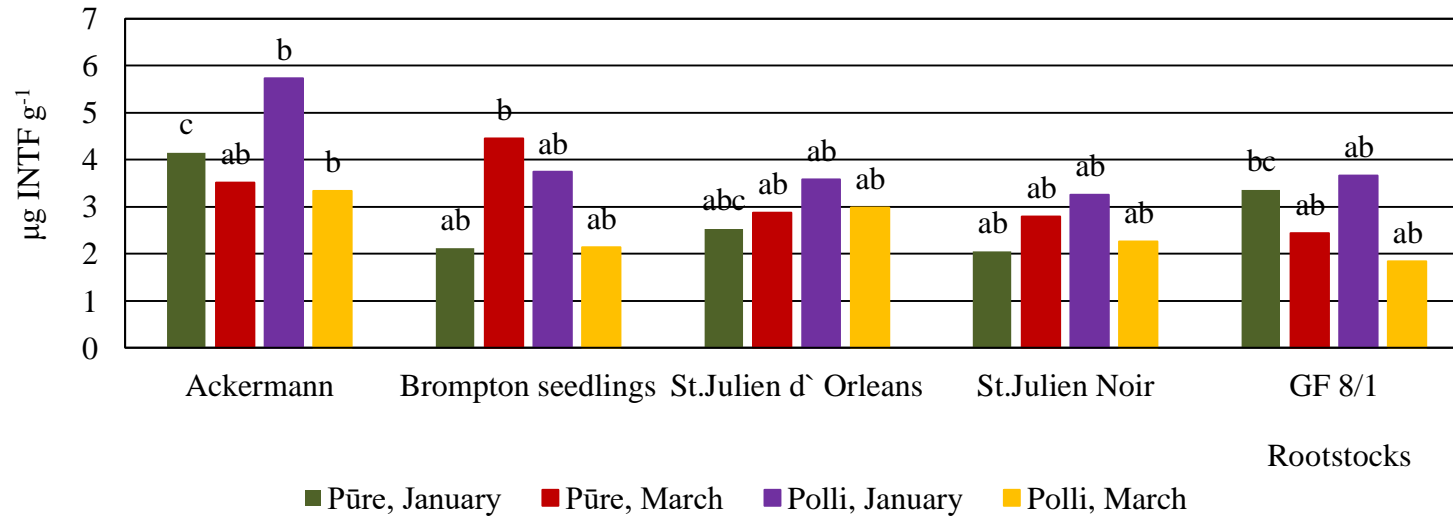
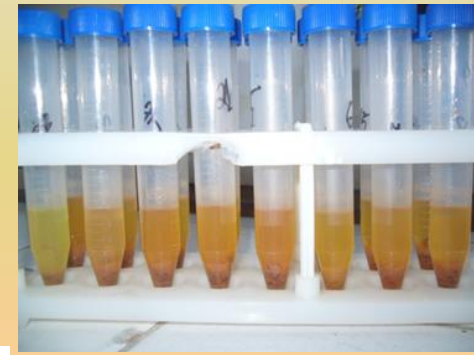


values between columns marked by different letters have significant difference (Duncan criteria, $p=0.05$)

For cv. ‘Kubanskaya Kometa’ in both trial places, the most stable rootstock-cultivar combinations with the highest values of dehydrogenases activity were for rootstocks ‘Myrobalan’, ‘St. Julien INRA 2’, ‘Wangenheims Zwetsche’, *P. cerasifera* var. *divaricata* and ‘St. Julien d` Orleans’.



Cultivar - rootstock combinations with the highest flower buds dehydrogenase activity for the cultivar 'Victoria'



values between columns marked by different letters have significant difference (Duncan criteria, $p=0.05$)

Cv. 'Victoria' during three wintering periods had lower activity of dehydrogenases compare to cv. 'Kubanskaya Kometa'. For cv. 'Victoria' at both trial places, rootstocks 'Ackermann', 'Brompton' seedlings, 'St. Julien d` Orleans', 'St. Julien Noir', 'GF 8/1' were selected as the best and the most stable, with the highest activity of dehydrogenases. 6

CONCLUSIONS

- In both trial places for cultivar ‘Kubanskaya Kometa’, the most stable rootstock-cultivar combinations with the highest values of dehydrogenases activity were for rootstocks ‘Myrobalan’, ‘St. Julien INRA 2’, ‘Wangenheims Zwetsche’, *P. cerasifera* var. *divaricata* and ‘St. Julien d` Orleans’.
- For cultivar ‘Victoria’ at both trial places, rootstocks ‘Ackermann’, ‘Brompton’ seedlings, ‘St. Julien d` Orleans’, ‘St. Julien Noir’, ‘GF 8/1’ were selected as the best and the most stable, with the highest activity of dehydrogenases.

