

Diploid plum genetic resources and variety testing in Latvia

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Japanese plums

- Of diploid plum ($2n=16$) species, **JAPANESE PLUM *Prunus salicina*** is commercially important in warmer regions, but **lacks winter-hardiness in Latvia**.
- Its subspecies **USSURIAN PLUM *P.salicina* ssp. *ussuriensis*** is **cold-hardy, but sensitive to temperature fluctuations** in late winter and often **susceptible to diseases like *Monilinia* sp.**
- Of this group **only one cultivar - 'Skoroplodnaya'** is commercially successful in Latvia, and **only in continental regions**.
- Other diploid species are used in crosses with Japanese plum – **myrobalan *P.cerasifera*** (high disease tolerance), ***P.americana***, ***P.nigra*** (winterhardy), ***P.simonii***, etc.



Inter-species hybrids

- The best results of inter-species hybridization were achieved IN RUSSIA, where the complex of winter-hardy diploid hybrid plums was named *Prunus rossica* Erem., and BELARUS.
- The inter-species hybrids are better adapted in Latvia, but still may suffer from flower bud damages.
- The most stable production has 'KOMETA' ('Kometa Kubanskaya'), which is widely grown commercially.
- Only cvs. ripening before domestic plums are commercially important.
- Many inter-species hybrids have poor pollen quality in Latvian climate - suitable pollinators are essential.



Cultivars problematic in Latvia

- **Lack regularity of production because of flower bud winter damages + tree injury in critical winters.**
- Very large fruits (to 60g) – **‘Kolonnovidnaya’** (later flowering, red flesh).
- Early ripening, good quality - **‘Ijanskaya Roza’** (‘Kometa Rannaya’), **‘Naidyona’**.
- Pollinators – **‘Mara’**: ripening with domestic plums, susceptible to fruit rot; **‘Puteshestvennitsa’** (‘Rubinovaya’): medium hardy
- **Historical cultivars** (*P.salicina* x *P.cerasifera*!) - **‘Early Golden’**, **‘First’**- very low winter hardiness.



**‘Kolonnovidnaya’
‘Naidyona’
‘Ijanskaya Roza’**



Variety trials

- The newest Russian and Belarussian cultivars included in **variety trials** since **2015** are:
 - ‘Carskaya’, ‘Nesmeyana’, ‘Sigma’, ‘Zlato Skifov’ - Russia;
 - ‘Lodva’, ‘Soneika’ - Belarus.
- **‘Zlato Skifov’** seems promising as both hardy and **extremely early ripening**. Yet the fruits in Latvia are **only 20 g**.
- ‘Carskaya’ – hardy, productive, but very small fruits.
- ‘Sigma ‘ – productive, not large fruits, flavour lacking some years.
- Other cvs. - low productivity.



Latvian genetic resources (1)

- Our genetic resources collection of diploid plums holds **22 cultivars and hybrids of Latvian origin.**

THE MOST INTERESTING ARE:

- **'Alvis'** (*P.salicina ssp.ussuriensis* x *P.cerasifera*) - very hardy pollinator, small fruits in medium season; ornamental value in flower time
- **Rootstock PU-20651** (*P.salicina ssp.ussuriensis* x *P.cerasifera*) - slightly reducing tree vigour, can be propagated by seed and cuttings



'Alvis' – fruits, flowers



Latvian genetic resources (2)

Redleaf plums:

- **‘Spīdola’** - medium hardy, good pollinator, fruits for processing
- **‘Liesma’** - very hardy, pollinator, fruits for processing
- **‘Gunta’** - very hardy, complex hybrid : poor pollen

Hybrid of black apricot (*P. x dasycarpa*) **Ma-1** : hardy, productive, but small fruits

MA-1 fruits



‘Spidola’ - flowers



‘Gunta’ - trees in spring and autumn





Thank you!