

Pomological characteristic of some apricot cultivars well adapted to Polish climate

Weightiness of apricot growing in Poland is quite low. Accordingly to Central Statistical Office of Poland in the year 2016 harvested production of apricots in Poland was 4 thousand tons what constituted 0.11% of total fruit production from trees only. In last four years no progress in apricot trees cropping was recorded. Poland ranks leading place in the EU in terms of apple production, recently averaging 3.6 million tons and from 2013 to 2016 increasing of 500 thousand tons was observed.



'Darina'



'Dobrzyńska'



'Early Orange'



'Goldrich'



'Harcot'



'Harostar'



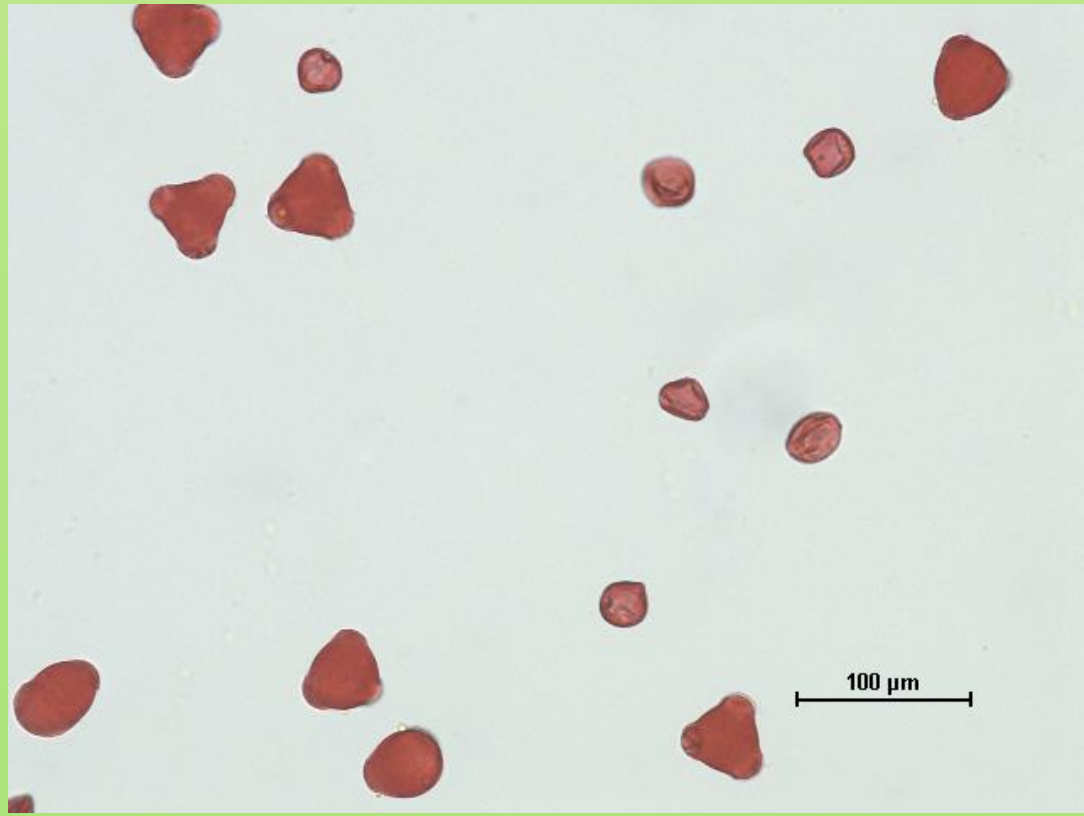
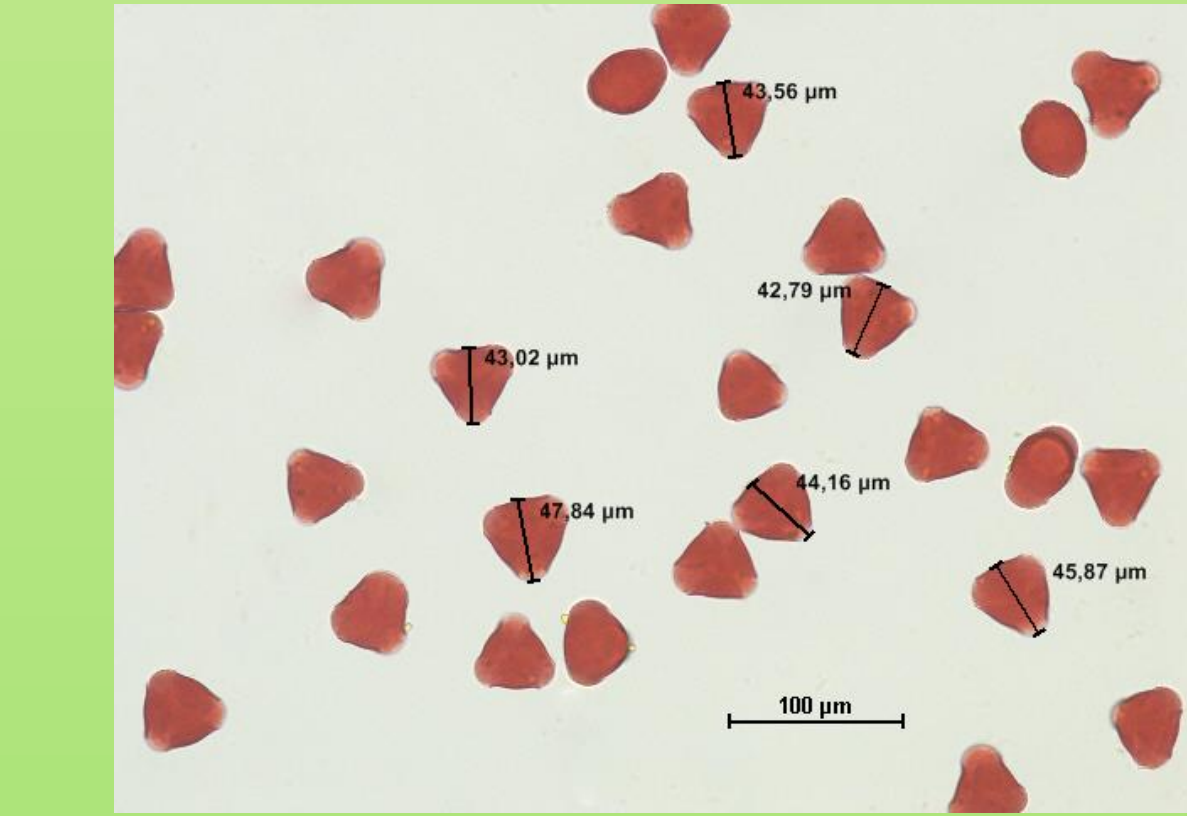
'Orangered'



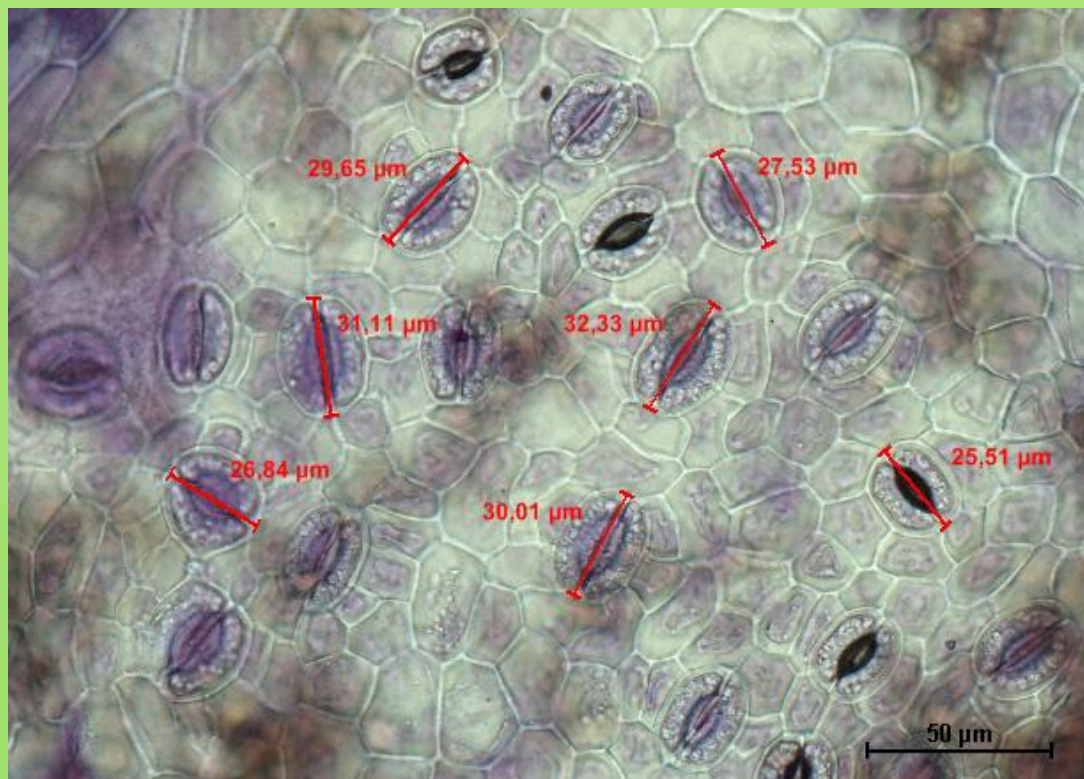
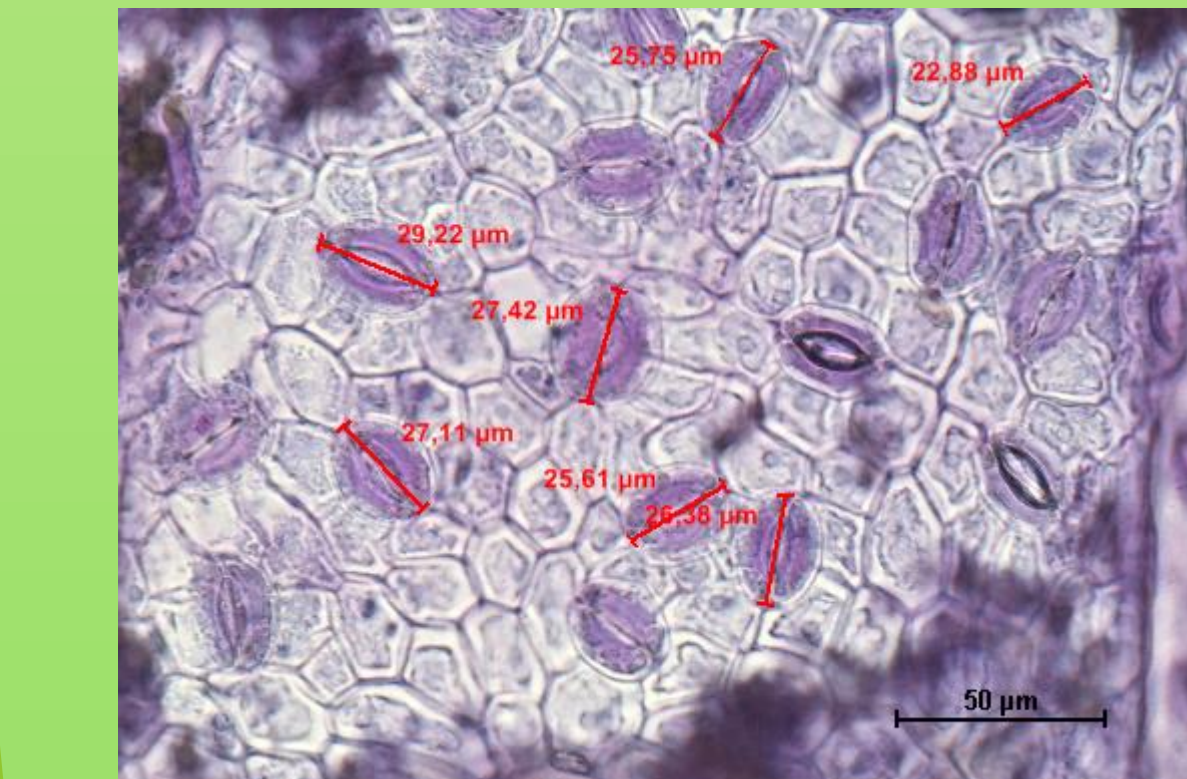
'Morden 604'



Morphology of apricot flowers. The heterostyly visible in the flower bud - 'Darina' (left) and normal structure of flower - 'Dobrzyńska' (right).



The pollen grains stained with acetoorcein in 'Harcot' (left) and 'Goldrich' (right).



The stomata on the bottom side of leaf in 'Orangered' (left) and 'Darina' (right).

The Polish climate is not favorable to apricot growing. Winters are long and cold with minimal temperatures from -15°C to - 25°C. In addition, frost/freeze events during blossom in the spring very often limit the fruitlet formation and yielding of apricot trees. Therefore, not all apricot cultivars grow well and produce high yield of good fruit quality in such conditions. Polish fruit growers are looking mainly for cultivars that are more resistant to winter cold and spring frost damage, bacterial and fungal cankers, fungal diseases, and they expect first of all very high yields of high quality fruits.

In Polish National List of Fruit Plant Varieties there are 9 cultivars only. In addition a few other cultivars are growing in commercial orchards. Almost all knowledge on apricot cultivars value come from investigation made in field collection. Currently, more than one hundred cultivars, selections and seed genotypes of *Prunus armeniaca* L. are collected and evaluating in the apricot collection of Research Institute of Horticulture in Skierniewice. The tables present pomological characteristics of 8 high fruit quality cultivars: 'Darina', 'Dobrzyńska', 'Early Orange', 'Goldrich', 'Harcot', 'Harostar', 'Morden 604', 'Orangered' which on base of multiyear observations well tolerated changeable climate of Poland. In addition microscopic analysis of stomata and pollen grains of 10 apricot cultivars was done.

Variety	Mean beginning of blooming time 2014-2016	Mean blooming intensity 2014-2016 (Scale 1-5*)	Mean end of blooming time 2014-2016	Health status of trees 2014-2016 (Scale 1-9*)
'Darina'	9.04	3.2	20.04	8.0
'Dobrzyńska'	8.04	3.5	19.04	8.2
'Early Orange'	4.04	3.2	15.04	7.5
'Goldrich'	4.04	4.4	15.04	8.2
'Harcot'	8.04	4.5	19.04	7.8
'Harostar'	5.04	4.2	16.04	7.5
'Morden 604'	6.04	3.2	17.04	8.5
'Orangered'	6.04	2.7	17.04	7.8

*Scale 1-5 (1 – no blooming, 5 – abundant blooming)
*Scale 1-9 (1 – died plant, 9 – healthy plant)

Variety	Mean yield intensity 2014-2016 (Scale 1-9*)	Mean fruit weight 2014-2016 (g)	Mean stone weight 2014-2016 (g)	Mean ripening time of fruit 2014-2016	Mean content of soluble solids in fruit 2014-2016 (%)
'Darina'	1.5	61.3	2.5	3.08	13.6
'Dobrzyńska'	2.5	63.4	4.2	20.07	16.9
'Early Orange'	1.5	42.1	2.7	15.07	16.8
'Goldrich'	2.8	57.5	3.4	18.07	14.2
'Harcot'	2.3	58.8	2.7	19.07	18.5
'Harostar'	3.6	53.5	2.5	24.07	17.3
'Morden 604'	3.1	46.3	3.1	12.07	16.8
'Orangered'	3.2	45.2	2.4	11.07	15.6

*Scale 1-9 (1 - no fruiting, 9 – abundat fruiting)

Measurements of apricot stomata were made on microscopic preparations epidermis bottom side of the leaf isolated and stained with toluidine blue. While the pollen grains from flowers were isolated and stained on microscope slides in a 2% solution acetoorcein. Analyses and measurements of stomata and pollen grains were performed using a light microscope Nikon Eclipse 80i.

