

# EVALUATION OF SOME PEACH CULTIVARS IN THE GENOTYPE COLLECTION OF RESEARCH INSTITUTE OF HORTICULTURE IN SKIERNIEWICE, POLAND



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Peach production in Poland is not as popular as apple production. Poland ranks leading place in the EU in terms of apple production, recently averaging 3.2-3.5 million tons, while 15-25 thousand tons of peaches can be produced in good seasons only. However, average peach production has been increasing in recent years with the renovation of orchards, introduction of new cultivars and the establishment of more efficient planting systems.

The climate in Poland is not favourable to peach production. Winters are long and cold, and in the majority of winter seasons temperatures from -15 to -25C° can be expected. In addition, frost/freeze events during blossom in the spring very often limit the fruitlet formation and yielding of peach trees. Therefore, not all peach cultivars grow well and produce good crops in these conditions. To increase orchard productivity and efficiency, fruit growers are looking for solutions mainly in the form of new 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.

Variety	Mean yield intensity 2013-2015 (Scale 1-9*)	Mean fruit weight 2013-2015 (g)	Mean time of fruit ripening 2013-2015	Mean content of soluble solids in fruit 2013-2015 (%)
'Diamond Princess'	2.7	163.3	25.08	12.2
'Early Redhaven'	6.2	123.5	28.07	9.0
'Elberta'	6.1	126.7	08.09	14.6
'Flamin fury P.F. 27A'	3.5	138.4	05.09	11.7
'Harrow Diamond'	5.3	112.5	25.07	9.6
'Jerseyland'	5.7	116.7	12.08	11.5
'Manon'	3.5	138.8	17.07	9.5
'Redhaven'	7.2	125.8	19.08	10.5
'Royal Glory'	6.7	135.7	05.08	14.0
'Summer Lady'	3.0	142.5	09.09	10.7

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

Variety	Mean beginning of blooming time 2013-2015	Mean blooming intensity 2013-2015 (Scale 1-5*)	Mean end of blooming time 2013-2015	Type of flower
'Diamond Princess'	16.04	1.8	28.04	„rose”
'Early Redhaven'	12.04	3.5	23.04	„bell”
'Elberta'	17.04	3.5	28.04	„bell”
'Flamin fury P.F. 27A'	15.04	4.0	25.04	„bell”
'Harrow Diamond'	14.04	3.8	25.04	„rose”
'Jerseyland'	15.04	2.8	26.04	„bell”
'Manon'	17.04	1.7	28.04	„intermediate”
'Redhaven'	16.04	3.9	27.04	„bell”
'Royal Glory'	15.04	3.2	26.04	„intermediate”
'Summer Lady'	18.04	0.8	28.04	„rose”

\*Scale 1-5 (1 – no blooming, 5 – abundat blooming)



Fot. 1-2. „Rose” type of flower – 'Summer Lady' (left) and „bell” type – 'Early Redhaven' (right)



'Diamond Princess'



'Early Redhaven'



'Royal Glory'



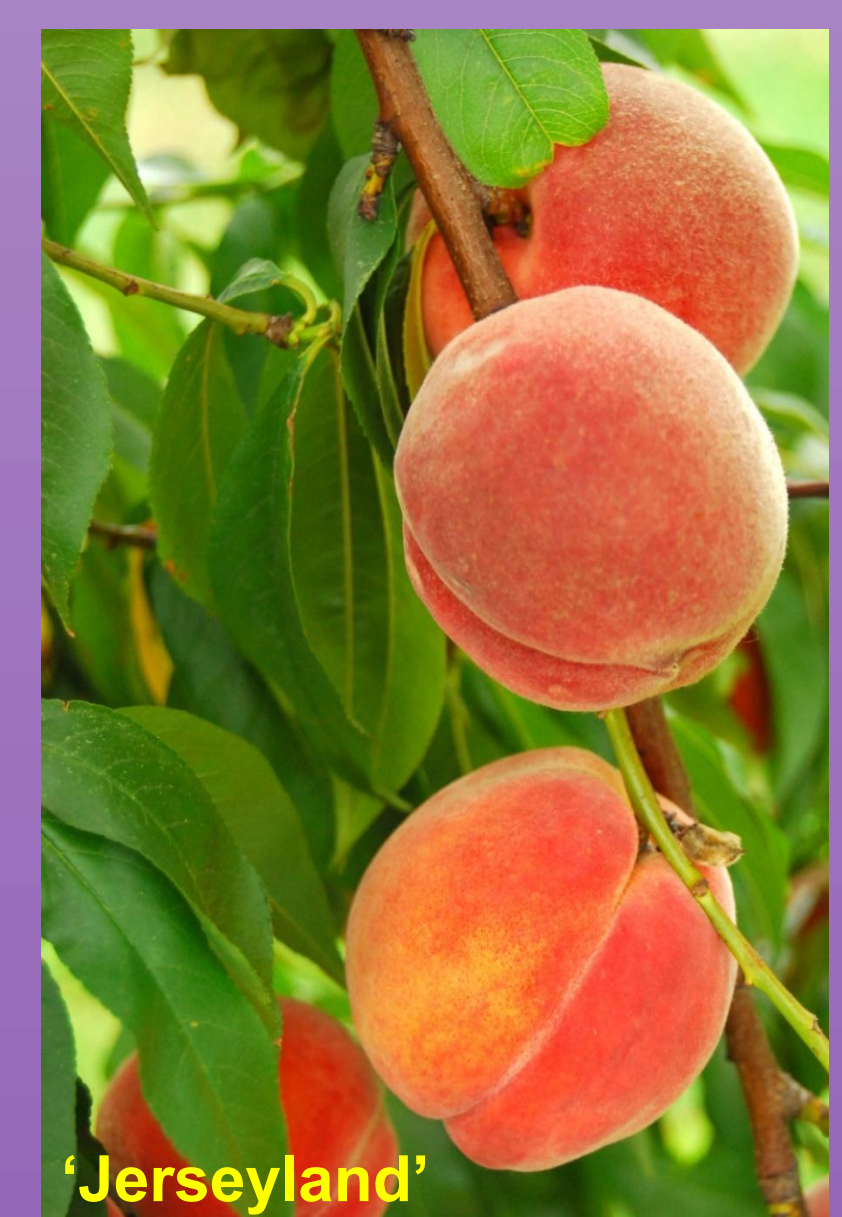
'Elberta'



'Flamin fury P.F.27A'



'Harrow Diamond'



'Jerseyland'



'Manon'



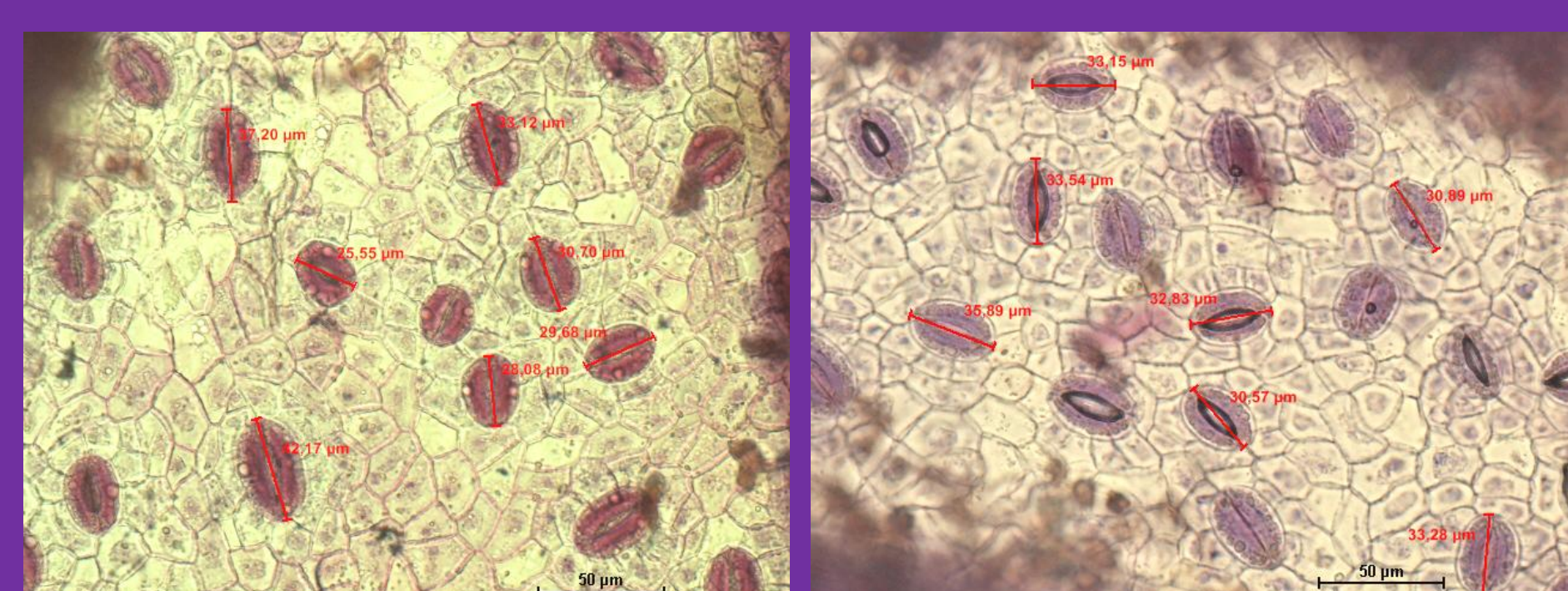
'Redhaven'



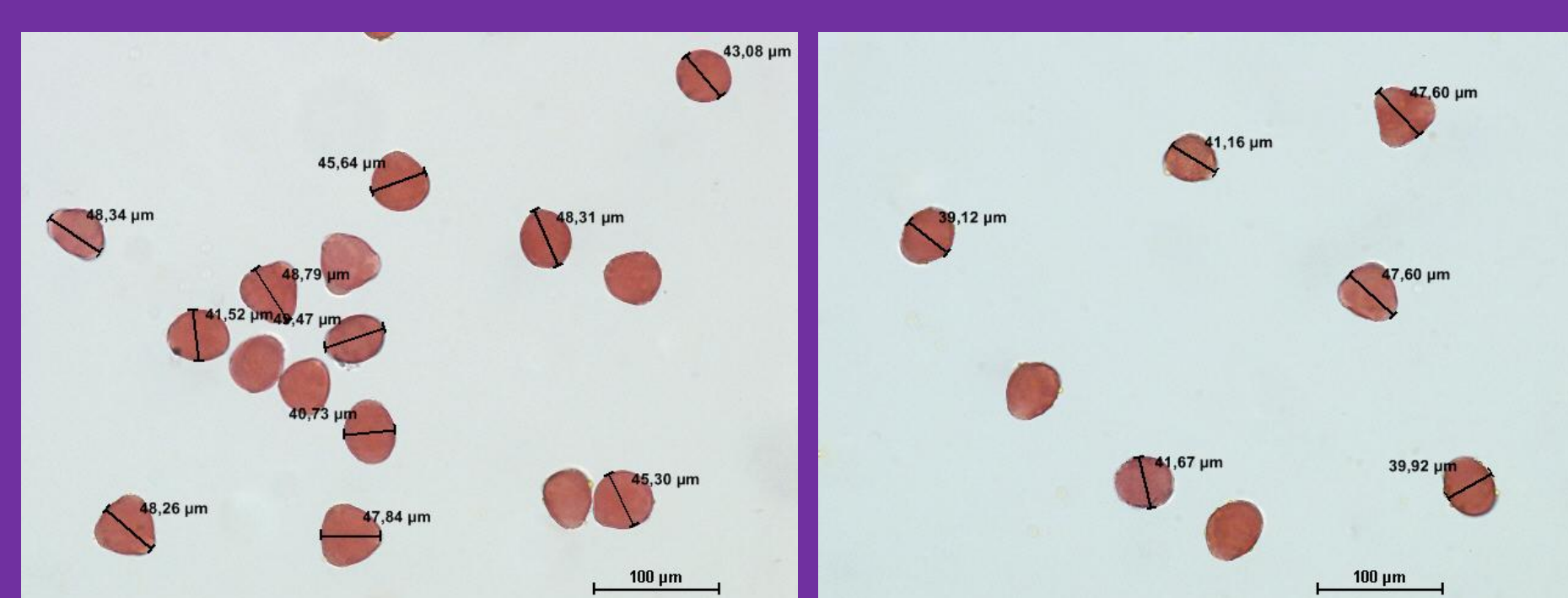
'Summer Lady'

In the possession of the Research Institute of Horticulture in Skierniewice, Poland, there are over 150 cultivars, selections and seedlings of peaches and nectarines. The collection is main source of information on peach varieties value for polish fruit growers because no additional experiments in this matter are realized. The poster presents pomological characteristics of 10 high fruit quality foreign cultivars: 'Diamond Princess', 'Early Redhaven', 'Elberta', 'Flamin Fury P.F. 27A', 'Harrow Diamond', 'Jerseyland', 'Manon', 'Redhaven', 'Royal Glory', 'Summer Lady' which on base of multiyear observations well tolerated changeable climate of Poland.

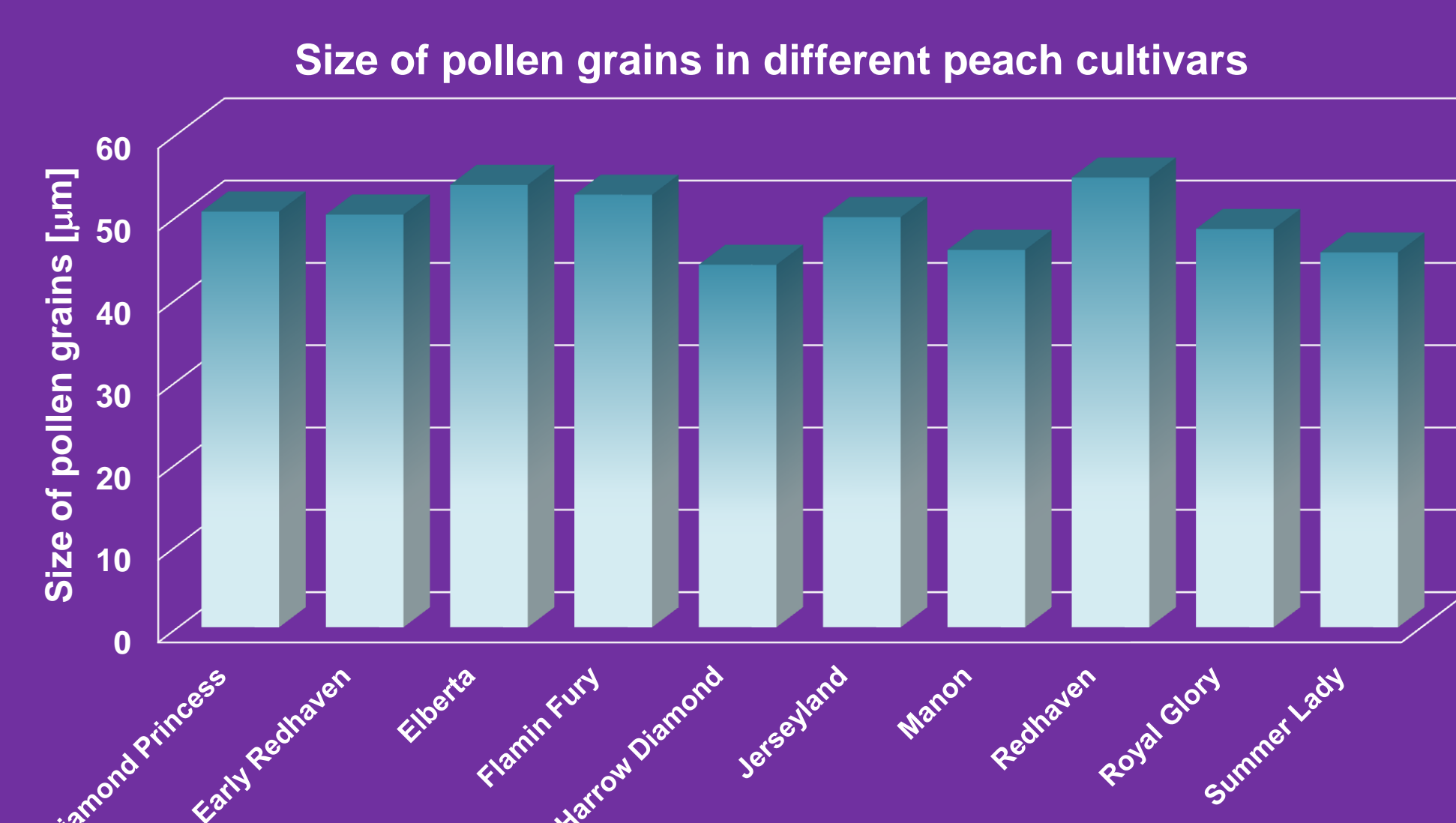
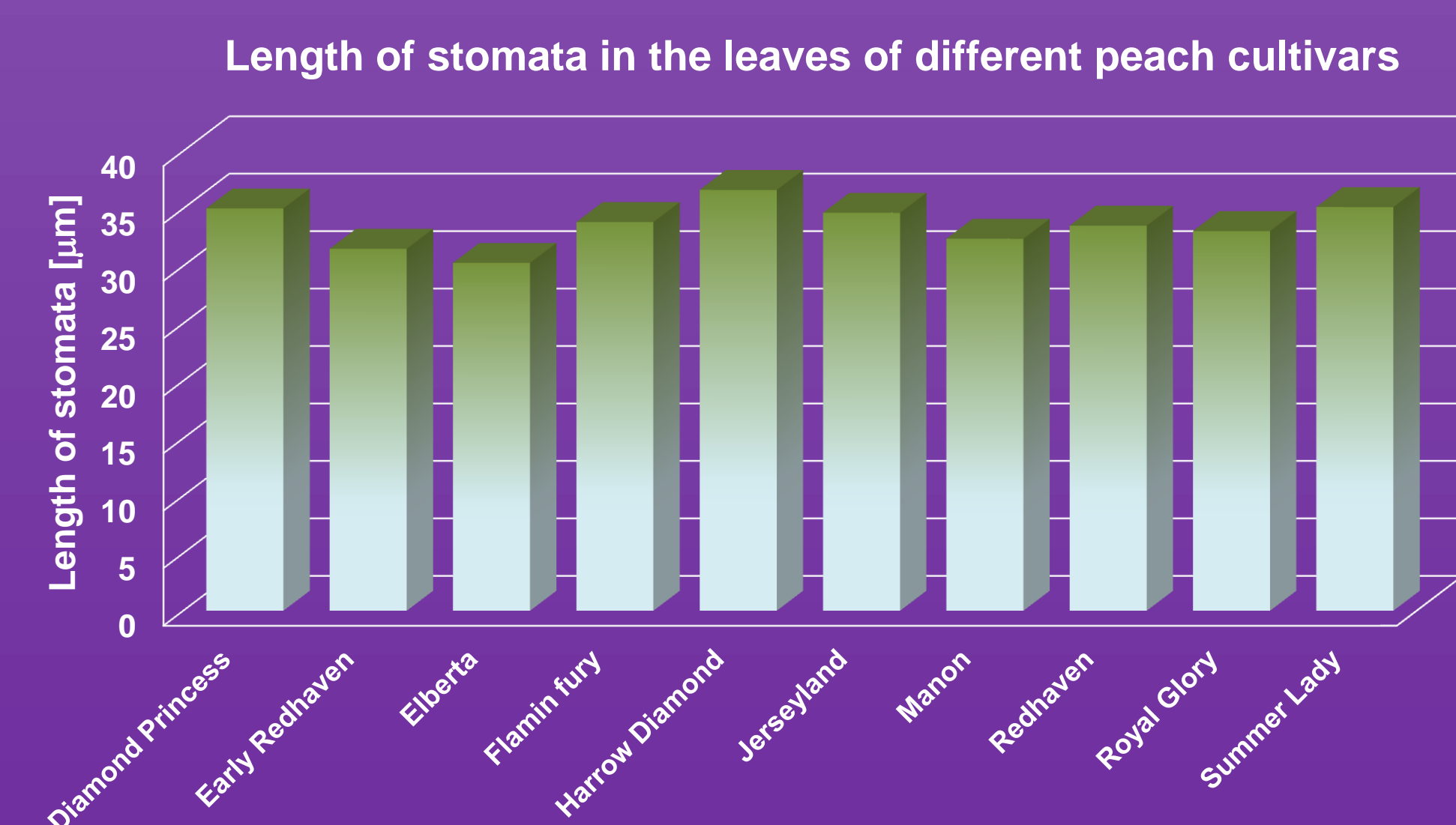
In addition microscopic analysis of stomata and pollen grains of each peach cultivar was done. Measurements of stomata were made on microscopic preparations epidermis bottom side of the leaf isolated and stained with toluidine blue. While the pollen grains from flowers were isolated and stained on microscope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



Fot. 3, 4. Stomata on the bottom side leaf in 'Royal Glory' (left) and 'Redhaven' (right) cultivars.



Fot. 5, 6. Pollen grains stained with acetoorcein in 'Manon' (left) and 'Harrow Diamond' (right) cultivars.



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