

Composition and content of phenolic compounds of apple cultivar 'Auksis' on various rootstocks

**Darius Kviklys¹, Mindaugas Liaudanskas²,
Jonas Viškėlis¹, Loreta Buskienė¹, Juozas Lanauskas¹,
Nobertas Uselis¹, Valdimaras Janulis²**

¹Institute of Horticulture,
Lithuanian Research Centre for Agriculture and Forestry,
Kauno 30, LT-54333, Babtai, Kaunas distr., Lithuania,
email: dkviklys@gmail.com

²Department of Pharmacognosy,
Lithuanian University of Health Sciences,
A. Mickevičiaus 9, LT-44307 Kaunas, Lithuania

The trial was carried out at the Institute of Horticulture, Lithuanian Research Centre for Agriculture and Forestry in 2011–2013. Cultivar 'Auksis' was tested on 12 rootstocks: 'B396', 'B9', 'M9', 'M26', 'P22', 'P59', 'P61', 'P62', 'P66', 'P67', 'PB4' and 'Pūre 1'.

Accumulation of phenolic compounds depended on fruit yield and average fruit weight. On the average of all rootstocks significantly lower content was recorded when trees gave abundant yield and fruit were smaller.

On average chlorogenic acid constituted 50 % and total procyanidins 28 % of total phenols in 'Auksis' fruit.

Flavonoids were the most depended on rootstock and the highest variation was recorded. More than 50 % difference between the highest total flavonoid content in apples on 'PB4' and the lowest content on 'M9' rootstocks was recorded. Low variability of total procyanidins due to rootstock was established. Differences between the highest and lowest content was 15 %.

Total content of phenolic compounds differed among rootstocks by 29–35 % depending on the year. Differences in accumulation of phenolic compounds depended on rootstock genotype but not on yield or fruit weight.

'PB4' and 'P67' rootstocks determined the highest, while 'M9', 'P62' and 'M26' determined the lowest content of total phenols in 'Auksis' fruit.

Keywords: apple fruit, bioactive substances, *Malus × domestica*, yield