

# The content of macroelements in the pulp and peel of different varieties of pear fruit

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## Introduction

Pear peels are usually discarded before processing of the fruits. However, it could be expected that pear peels contain more minerals. Therefore, the aim of this study was to investigate and compare the amounts of macroelements in pulp and peels of four pear cultivars.

## Materials and methods

Four pear cultivars ('Ksena', 'Beloruskaja Pozdniaja', 'Alna' and 'Aleksandr Lucas') were cultivated at a farm in the Joniškis district of Lithuania. Pears were grown following traditional pear production technology. The pear fruits were harvested at maturity. Pear were peeled manually (0.5-1 mm thick) with a standard hand-held vegetable peeler, and their peels and pulp were dried at 60 °C in drying oven until constant weight. The amounts of five macroelements (nitrogen, phosphorus, calcium, magnesium and potassium) were determined using inductively coupled plasma atomic emission spectroscopy (ICP-AES). The statistical significance of differences between the means was estimated by Fisher's LSD test ( $p < 0.05$ ).

## Results

The results showed that the amount of macroelements depends on pear cultivar and tissue (Table 1). Pear peels have significantly higher amounts of calcium than the pulp. However, pulp contains the highest contents of nitrogen and potassium.

**Table 1.** The content of macroelements in the pulp and peel of different cultivar of pear fruit (mg 100 g<sup>-1</sup>).

Pear cultivar	Macroelements (mg 100 g <sup>-1</sup> DM)					
	Pear tissue	Potassium (K)	Nitrogen (N)	Phosphorus (P)	Calcium (Ca)	Magnesium (Mg)
'Beloruskaja Pozdniaja'	pulp	530.33 d	512.09 c	77.11 b	23.41 f	38.42 e
	peel	490.06 e	276.11 fg	90.22 a	48.11 c	57.23 b
'Ksena'	pulp	560.15 c	664.16 a	70.02 c	45.12 c	47.34 d
	peel	430.02 f	272.05 g	75.12 b	57.13 b	66.31 a
'Alna'	pulp	690.13 b	642.42 b	87.32 a	35.19 d	63.12 a
	peel	380.14 g	448.02 d	60.03 d	78.23 a	57.16 a
'Aleksandr Lucas'	pulp	700.03 a	414.03 e	76.31 b	30.14 e	52.25 c
	peel	530.04 d	287.31 f	59.05 d	56.31 b	43.07 c

Note: Different lowercase letters in the same column represent significant differences between means at  $p \leq 0.05$ ; DM - dry matter.

## Conclusion

Based on the present study, it can be concluded that the investigated pear peels showed only significantly higher calcium contents compared to the pulp.