

PHOSPHOLIPIDS OF THE CAMBIAL ZONE OF *Larix sibirica*L. P. Rubchevskaya, E. V. Ignatova,
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Among coniferous plants of the Pinaceae family a special position is occupied by the Siberian larch (*Larix sibirica*). Thanks to the seasonal appearance of needles, it is the most convenient object for studying the lipid metabolism in conifer tissues in connection with the ontogenesis of the tree.

We have previously acquired information on the accumulation of the phospholipids (PLs) of the needles and shoots (woody verdure) of the Siberian larch and the changes in their fatty acid composition during the vegetation period [1, 2]. In a further chemical study of the PLs isolated from the vegetative tissues of this tree, we have investigated a fraction of the total PLs of the cambial zone. The methods of isolating, identifying, and quantitatively determining the individual groups of PLs were analogous to those described in [1]. The results of the analyses, which were performed in the course of an annual cycle, are given in Table 1.

As compared with the woody verdure, the total PLs of the cambial zone of the larch were present in considerably greater amount (the maximum being 0.79% on the a.d.w. in November). Characteristic for the tissues of the cambial zone was a high level of PLs in the autumn–winter period (October–February) and a lower level in the summer (May–June).

The qualitative composition of the PLs of the cambial zone was more diverse than those of the needles and shoots. The results obtained showed that the cambial zone of the larch contained its own PLs (phosphatidic acids (PAs) and N-acyl-PEs) — in addition to phosphatidylcholines (PCs), phosphatidylethanolamines (PEs), and phosphatidylserines (PSs). Each of these groups of PLs is characterized by its own dynamics of the changes in its amount through the year. PCs, PEs, and PSs are present in the cambial zone throughout the annual cycle, with maxima in the autumn–winter period and minima in summer. The PCs predominate quantitatively over the other groups of PLs (up to 58% of the total PLs in November). PIs were found in the cambial zone only in the spring–summer period (from March to July), and the N-acyl-PEs, conversely, in the period from August to February. PAs were present in the PLs of the cambial zone throughout the annual cycle at levels of 2.7–16% of the total PLs. This group of compounds had also been detected previously in the needles of the main forest-forming coniferous species of Siberia — Scots pine and Siberian fir [3].

TABLE 1. Composition of the Phospholipids of the Cambial Zone of *Larix sibirica* (% on the absolutely dry matter)

Time of taking the samples	PEs	PCs	PSs	N-Acyl-PE	PIs	PAs	Total PLs
January	0.14	0.44	0.04	0.06	-	0.02	0.70
February	0.18	0.44	0.06	0.04	-	0.02	0.74
March	0.20	0.30	0.02	-	0.03	0.05	0.60
April	0.16	0.22	0.02	-	0.03	0.03	0.46
May	0.12	0.28	0.02	-	0.02	0.02	0.46
June	0.12	0.23	0.01	-	0.01	0.02	0.39
July	0.13	0.30	0.02	-	0.02	0.05	0.52
August	0.15	0.25	0.02	0.05	-	0.09	0.56
September	0.11	0.31	0.04	0.06	-	0.08	0.60
October	0.15	0.38	0.06	0.07	-	0.07	0.73
November	0.15	0.46	0.06	0.06	-	0.06	0.79
December	0.16	0.38	0.06	0.07	-	0.05	0.72

REFERENCES

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3. T. G. Zingel', *Phospholipid Concentrates of the Woody Verdure of Coniferous Plants* [in Russian], Author's Abstract of Dissertation ... Candidate of Technical Sciences, Krasnoyarsk (1990).