

## **Plant Growth Regulators Derived from the Needles of Siberian Fir: Structure of Major Components**

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Mixtures of terpenoids derived from the needles of Siberian fir are known to exhibit a potent biological activity. Application of these compounds to common field crops leads to an increase in seed germination rate, enhanced draught and frost resistance, plant growth stimulation, and an increase in yields and product quality. The exact composition of these mixtures is hitherto unknown.

The present work employs HPLC/MS, IR and NMR methods to study the composition of the “Novosil” №2-17-00 plant growth regulator derived from the needles of Siberian fir.

Several major components were isolated by means of preparative HPLC. Their structures were determined using IR and 2D  $^1\text{H}$  and  $^{13}\text{C}$  NMR spectroscopy. Quantitative data on the tripterpenoid content in several technologically different preparations are reported.