

The effect of nitrogen fertiliser on growth and production of apples in the conditions of Latvia

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Nitrogen is a nutrient necessary for many functions of plants, e. g. shoot growth, fruit and flower bud set, and fruit size. Use of mineral fertilisers in Latvia is limited by EU Nitrate Directive 91/676/EEC and Regulations of the Cabinet of Ministers of Latvia No. 834 (23.12.2014) „Regulation regarding protection of water and soil from pollution with nitrates caused by agricultural activity”. The aim of the study was to analyse nitrogen fertiliser influence on apple growth and production in the conditions of Latvia. The study was performed from 2013 to 2015, in a trial planted in 2009; all cultivars grafted on rootstock ‘B396’ (1.5 × 4 m), with regularly mown grass in alleyways. Drip irrigation was used only in tree rows. The trial included three early cultivars — ‘Konfetnoe’, ‘Kovalenkovskoe’, ‘Baltais Dzidrais’, and four late cultivars — ‘Gita’, ‘Antej’ and ‘Rubin’ (Kazakhstan). There were two fertiliser treatments in tree rows — without fertilising and fertilising with N 6 g m⁻². The content of nitrogen, potassium, calcium and magnesium was determined in apple leaves. After the end of shoot growth shoots were counted and grouped in two groups — 20–40 cm and >40 cm long shoots. Fruit yield was weighed and evaluated. Effect of treatment was observed only in cultivar ‘Gita’. Tree crown in the N treatment was over-dense, shoots too long, yet all cultivars had over-long shoots also in the unfertilised treatment. Even if N was not applied for three years, its after-effect was significant.

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