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SUMMARY

Cereals in Poland, but also in the European Union, are the raw material that ensures a country's food security. Wheat grain is mainly used as a raw material for the production of flour and other consumer products and is used as animal feed. In recent years, there has been increasing interest in the production of malt and beer from raw materials other than spring barley. Of the wide range of alcoholic beverages, wheat beer enjoys great appeal among consumers. In order to obtain high quality wheat malt, it is necessary to select a variety characterised by appropriate raw material parameters and to modify the technological process of malting to obtain good physical, chemical and sensory characteristics of the beer produced. Therefore, the aim of the research was, under the conditions of field and canopy experiments, to develop the optimum technology for growing winter wheat for use in the brewing industry, together with determining its production cost intensity.

Nitrogen fertilisation applied in field experiments, mainly the dose of 60 kg N ha^{-1} , had a positive effect on the quality distinguishing features evaluated during the growing period of winter wheat, as well as on its yield, quality of the obtained grain, malting process and quality of the obtained product, and finally on the quality of brewed wheat beer. On the basis of the field experiments carried out, the Gimantis variety was characterised by the most balanced, high values of quality characteristics of physiological traits, yield-shaping elements, grain, malt and wheat beer quality among the analysed varieties, as well as, although to a lesser extent (mainly due to the good malt and wheat beer quality obtained), the Rockefeller variety.

On the other hand, the results obtained in field experiments conducted in the Podkarpackie voivodeship indicate the Gimantis and Elixer varieties as potential raw material for malting and brewing production. In addition, an evaluation of the cost-effectiveness of winter wheat cultivation for malting and brewing purposes conducted on selected farms (field experiments) showed that Gimantis and Elixer cultivars were characterised by a high economic production efficiency index, which amounted to 3.87 and 3.14, respectively, thus indicating the profitability of winter wheat production for this branch of the food industry.