The results of the presented dissertation with winter triticale were obtained from strict field experiments located in the Agricultural Experiment Station in Bałcyny and private fields production. A three-factor field experiment in Balcyny was carried out in the growing seasons of 2016–2017, 2017–2018, and 2018–2019 using the randomized block method in 3 repetitions. The factors of the experiment were varieties of winter triticale (Twingo and Panteon), nitrogen fertilisation (1 - 0 - objects without nitrogen fertilization, 2 - according to the Nmin content in the soil, 3 - 150% of the nitrogen dose at level 2, 4 - 150% of the nitrogen dose at level 2 + retardant, 5 - 150% of the nitrogen dose at level 2 + retardant + biostimulator) and the level of antifungal protection (1 - seed dressing, 2 - seed treatment + 1 foliar treatment, 3 - seed treatment + 2 foliar treatments). In a field experiment, the effect of nitrogen fertilization and antifungal protection on yield and its components, fodder value and energy and economic efficiency of winter triticale grain production was determined. The energy efficiency analysis and economic assessment were performed on the basis of the results collected from the production fields in the 2017-2018 and 2018-2019 seasons.Significant differences in the yield of winter triticale were noted in the surveyed growing seasons. Under the climatic and soil conditions of the experiment (good wheat complex), the traditional variety Panteon yielded statistically higher than the short-straw variety Twingo. The tested cultivars of winter triticale reacted with similar yield variability in the years of the study. Different doses of nitrogen fertilisation used in the experiment significantly differentiated the grain yield of winter triticale. Nitrogen applied in the amount of 100 $kg \cdot ha^{-1}$ with retardant and biostimulator was the most yield-forming in the cultivation of both varieties of winter triticale (in all years of research). The level of protection against diseases significantly differentiated the grain yield of winter triticale. Higher yields of the tested cultivars were obtained after applying one foliar treatment in comparison to the yields obtained when the fields were protected only with seed dressing. With full two-treatment foliar fungicide protection, the yield increase was only a tendency. Winter triticale cultivars differed statistically in the yield level. The semi-dwarf Twingo variety was characterized by 3.6% lower yield than the traditional Panteon variety. Nitrogen fertilisation had a positive effect on the number of spikes per area unit, the number of grains per spike, the content of crude protein, starch, fat and phosphorus in the grain, and contributed to a significant increase in the infection of winter triticale plants by Blumeria graminis and Fusarium spp. of all diseases on winter triticale plants. The level of intensity of protection against diseases significantly differentiated the grain yield of winter triticale. Level of nitrogen fertilization differential content of phosphorus, calcium, as well as zinc, iron, manganese and zinc.Higher intensity of winter triticale production technology had a negative impact on energy evaluation indices. Higher income from the production of winter triticale was ensured by high-input technology.