Studies were carried out in the years 2006–2009 in Experimental Farm ITP in Falenty in a plot (c. 0.3 ha) experiment set up on black degraded earth of a grain size structure of light dusty loam. The effect of soil pH and mineral or organic (manure and liquid manure) fertilisation at two rates of 60 (I) and 90 (II) kg N·ha\(^{-1}\) on yielding and the content of zinc in soil and meadow sward was analysed. Acidic pH of the upper soil layers was found in the first study year in all experimental plots. After three years of this study, soil pH decreased at both levels of fertilisation with mineral N and manure (M). Fertilisation with liquid manure (LM) stabilised soil pH. The smallest annual dry matter yields of meadow sward were obtained at two rates of fertilisation with manure. The highest yields were obtained in the object fertilised with mineral fertilisers at a rate of 90 kg N·ha\(^{-1}\) (NPK/II) and in those fertilised with liquid manure at the same rate (LM/II). Zinc content in studied soils was at medium and high level. Obtained results did not show clear relationship between pH of the soil and its richness in zinc. Regardless of initial pH and zinc content in the soil, applied fertilisation resulted in the reduction of zinc content. The biggest deficiency of zinc in the sward usually manifested itself in the first cut, which could be due to the large yield and the effect of dilution. Fertilisation with manure resulted in a marked improvement in the zinc content of meadow sward.