Corylus avellana is the source of inhalant allergies induced by hazel pollen as well as food allergies induced after ingestion of hazelnuts. In this study, real-time PCR approach was used to analyse expression of hazel pollen allergens on the molecular level. Relative quantity of hazelnut allergens Corylus avellana, L. CorA and Corylus avellana, L. pollen profiling in samples from different Ukraine areas were determining and comparing. Differences among the levels of both analysed allergen transcripts were found for hazel CorA and profillin. In both cases, the expression within the urbanized growth conditions was higher when compared to the sample from village area. The average expression for CorA was 0.84 times higher than for profilin and the results are very variable depending on the place of growth. Expression levels here were within the range of 2.957 up to the 52.936. Profilin expression was the highest in the sample from the polluted place of growth-cement plant area with the value of 52 times higher when compared to the sample from the village area. In this study, comparison of expression levels of hazel CorA and profiling pollen allergens was performed for the first time. Real-time PCR assay developed in this study proved the sensitivity for detection of the changes of the hazel pollen allergens expression levels and could benefit labs by fast and reproducible detection method of these allergens.