Abstract: In this paper, we present results indicating ozone effect on visible plants response as well as on other parameters, such as dry weight, chlorophyll concentration, cell membrane stability and salicylic acid content in bioindicator plants. Ozone-resistant and -sensitive clones of white clover (Trifolium repens L. cv. ‘Regal’) were used in the investigations. The experiment was carried out in ambient air conditions of the Wielkopolska province (Poland) in 2005 growing season. The exposure led to changes in the level of plant response parameters that might be used as potential biomarkers of oxidative stress triggered by tropospheric ozone in ambient air conditions.