Plants, like animals, are exposed to numerous and diverse stress factors. Their response to environmental stimuli is mediated with a vast number of substances. Hormones may play a role of such agents, and one of them is ethylene (ET). This simple - in terms of the chemical structure - particle participates in the regulation of reactions to biotic stresses (derived from bacteria, fungi, viruses, etc.) and abiotic (inanimate components of the environment). We know that ET biosynthesis is modified by several factors, and one of them is the intracellular concentration of carbon dioxide (CO_2). In our model, we use a plant (ice plant) which besides the classic photosynthesis type C_3 (CO_2 fixed mainly during the day), can switch to CAM photosynthesis (CO_2 fixed mainly in the dark). The implementation of CAM, although it allows a significant water saving (stomata closed during the day), has certain consequences. One of them is the daily oscillations of intracellular CO_2 concentration and this can affect the daily production of ET. Using the model that allows us to run experiments on plants carrying out C_3 and CAM at the same developmental stage, we intend to check how the presence of circadian CO_2 oscillations modifies the work of the most important components of the ET biosynthesis pathway. It has recently been shown that plant reactions to abiotic stress factors are regulated by the redox state of the plastoquinone pool (PQ), a component of the electron transport pathway in the chloroplast. PQ and ET form a regulatory system where PQ plays a superior role, and ET - together with components of the antioxidative system (regulation of cell redox homeostasis) are executives. Using the described model, we intend to check, how the modification of the redox state of the PQ pool affects the components of the ET biosynthesis pathway, and thus its daily production. In addition, using this model, we intend to determine how the work of the PQ-ET regulatory system is affected with the presence of different types of photosynthesis.