Currently, there is more and more discussion about the increasing greenhouse effect. It is associated with such changes as a temperature rise, droughts, and melting of glaciers. One of the most important aspects of this phenomenon is also the migration of plants and animals. When the conditions are very unfavorable, they change their place of occurrence to be more friendly. This means that the species of plants that have accompanied us in a given place for hundreds of years will slowly disappear. They will be replaced by new ones, often from different climatic zones and continents, more resistant to unfavorable weather conditions, temperature changes, and water deficit. It is they who will compete with domestic plants. The consequence of the entry of alien species into natural areas is the reduction of biodiversity, i.e. the creation of habitats with a smaller number of species. Alien invasive species can form monotypes, i.e. habitats that are entirely dominated by a given plant species. Such species include the wild cucumber (*Echinocystis lobata*). It is a North American, annual vine that grows in many European countries and is considered invasive. It needs a lot of light and a moist substrate to grow, so it can often be found in wet areas such as riparian forests, scrub, and meadows. It uses tendrils for climbing, thus limiting the access of light to other plants. Due to the high threat posed by the wild cucumber, new solutions that could be effective in limiting this vine are still being searched for. The research aims to understand the kinetics and biomechanics of the wild cucumber. The results may become the basis for the development of an effective plan for the limitation of this species and the protection of valuable habitats in the future. There is still little information in scientific literature about how foreign wild vines, such as the wild cucumber, grow, and the growth movements of which are crucial for the colonization of new lands. The proposed research will allow us to learn about the biomechanical parameters of this plant, which in the future may be the basis for the development of control methods. The obtained results will make it possible to accurately determine the speed of growth of this plant, which may be useful in the future, for comparing plants with each other. The terms used so far, such as "spontaneous" or "slow growth" are imprecise and may lead to many inaccuracies, therefore it is advisable to create a precise measurement method. The research methodology was divided into two parts: the first - concerning the kinetics and biomechanics of the shoot, and the second - focusing on the characteristics of the seeds. These studies, due to their specificity, will be able to be performed at the same time, so that which it will be possible to complete tasks faster and there will be additional time for possible repetitions of the experiment. The first part of the research will aim to determine physical parameters such as the speed of shoot growth, the speed of nutation movements (speed of the shoot tip movements), and the displacement of the plant shoot tip depending on the spacing of supports and tissue deformation. Supports will have different distances (5 cm, 20 cm, and 50 cm). After making time-lapse videos, they will be used to calculate the growth parameters of the plant. Microscopic preparations will be made from the recorded plants to assess changes in the anatomical structure of the tissues depending on the spacing of the plant supports. To determine the deformation of tissues, a non-contact method of digital image correlation will be used, so that a color map will be created with the changes that occurred during the attachment of the plant to the support. The second part of the research will concern the kinetics and biomechanics of seeds. This part will determine the biometric parameters of seeds (weight, width, area, circumference, circularity) and their germination efficiency under various storage conditions. So that it will be possible to assess in what conditions seeds have to germinate effectively, which may be useful in developing methods of controlling the germination of this plant in natural conditions.