The abundance and diversity of microorganisms in the biosphere reflects their ability to accumulate energy from various organic and inorganic substrates as well as the ability to grow in a wide range of natural conditions. Most often, the complexity of microbial communities is dependent on the conditions offered by the habitat for its colonization and the availability for energy and carbon sources. In most cases, habitats offer extreme climatic or environmental conditions, thus limiting the number of species that may exist in such an ecological niche. An example of such natural selection can be found in endolytic habitats which are colonized by microorganisms involved in their biodegradation or biodeterioration. This paper is a holistic approach to such microorganisms and the types of substrates they can colonize.