

Seed predation in exotic and native legumes - lab report example

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Seed Predation in Exotic and Native Legumes In a self sustaining natural habitat you will find many types of species which through evolution and adaptation to the prevailing ecological conditions live in mutual interdependence with other components of the environment. These native species are able to reproduce and ensure that they do not become extinct by improvising various modes of survival in the habitat in question. However nowadays with the introduction of exotic species in previously harmonious habitats, invasion is one of the new threats that have been experienced. Many exotic species have better ways of ensuring their survival in certain ecosystems which include faster growth rate and short life span. This way the exotic species reproduce fast and form dense populations thereby eliminating the native species that had initially thrived in the ecosystem freely. These are referred to as invasive exotic species. Exotic species are also referred to as non-indigenous species in many books. According to Keane and Crawley 2012, the most straightforward and appealing explanation for the rapid establishment and proliferation of non-indigenous species is that they are produced from the effects of their common foes and pathogens. The enemy release hypothesis explains that the abundance or impact of some non-indigenous species is related to the scarcity of natural enemies in the introduced range compared with the native range.

Keywords: non-indigenous species, ecosystems, species, hypothesis testing, environment,

Ecology

Introduction

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This experiment is aimed at evaluating the effect of invasive exotic species in the ecosystem. Pods of *A. lebeck* and *L. latisiquum* will be used to show the damage by our predator which in our case is the Bruchid beetles. The frequency of the holes made in the pods of the two different species will help us to generate our hypothesis with the two variables being used to generate the hypothesis being the origin of the species and the damage caused. The Chi-square test which will be done at the end of the practical session will be used to determine whether or not the damage caused on the seed pods was independent of the origin of the species.

Our chi-square results will provide evidence of the dependence of damage on the origin of the species that we used. According to Siemann and Rogers 2003, the existence of exotic species could be enhanced by better adaptation methods and faster growth rate in the prevailing conditions.

Further with time the native species could have generated many enemies and so its survival is further limited, Blossey & Nötzold 1995. If the exotic species has developed a resistance to the Bruchid beetles then it means that its survival in this specific ecosystem will be highly boosted, Siemann and Rogers 2003. The exotic species has a better chance of survival in this case since it was initially separated from its previous enemies. In our experiment we will be able to establish whether Bruchid beetles really affect its survival by using the number of the damaged pods in comparison to the number of damaged pods of the native species, Simmonds et. al 1989.

On the other hand if the holes left by these beetles will be present on the native (*Lysiloma latisiliquum*) species, with a higher frequency than in the exotic (*Albizia lebeck*), then we will establish the origin of the tree as our

dependent variable. Crawley and Keane 2002, claim that invaders perform better when introduced in a new habitat. In our case we shall rule this to be true or false by looking at the number of damaged pods by the Bruchid beetles. This is due to the absence of its perennial enemies in this new community, Tove von et. al. 2014. These two factors are used to introduce the enemy release hypothesis (ERH). However ERH should not be accepted without critical analysis because there are many other factors that are not considered in this test. Climatic variables, selection of invasive genotypes and human disturbance are among the variables that are not addressed in the current hypothesis.

Cited Work

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influences both

the intensity of seed predation and plant demographic sensitivity to attack.

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