
Genetic Diversity

Posted by WilhelmGGW - 2008/09/14 13:56

Is this of any practical concern with our worm populations? After all, our worms are sexual beings. I know inbreeding is considered a significant problem in a great number of species. What about our worms?

What with not periodically adding "new blood" to the gene pool of a worm bin -- that can go on in isolation for many generations! Is there any risk of eventually engendering a less robust population in our worm ecosystems?

Like.. Maybe we should at least move a few worms from one bin to another from time to time. Or, purchase worms from a different supplier each time.

I suspect we each can have guesses about this. Does anyone know of what any significant research has had to say about it?

=====

Re:Genetic Diversity

Posted by WilhelmGGW - 2008/09/15 08:14

So, the inbreeding causes about a net 15% reduction in reproduction -- that is, net over its outbreeding alternative. I guess that's something we all just live with? I'd be happy to hear what others have to say about this.

=====

Re:Genetic Diversity

Posted by Srenre - 2009/09/26 15:22

I know this is an old thread but I just got here ;)

Is the 15% reduction true or a guess?

If there is a 15% reduction in breeding inbred worms that can be quite significant on a large scale. This would also be simple to address by adding a few from another breeder from time to time.

So,... is it real?

=====

Re:Genetic Diversity

Posted by Peatar005 - 2010/05/11 08:27

Genetic diversity is a level of biodiversity

Biodiversity

Biodiversity is the variation of life forms within a given ecosystem, biome, or for the entire Earth. Biodiversity is often used as a measure of the health of biological systems...

that refers to the total number of genetic

Genetics

Genetics, , a discipline of biology, is the science of heredity and variation in living organisms. The fact that living things inherit traits from their parents has been used since prehistoric times to improve crop plants and animals through selective breeding...

characteristics in the genetic makeup of a species. It is distinguished from genetic variability

Genetic variability

Genetic variability is a measure of the tendency of individual genotypes in a population to vary from one another. Variability is different from genetic diversity, which is the amount of variation seen in a particular population. The variability of a trait describes how much that trait tends to...

, which describes the tendency of genetic characteristics to vary.

The academic field of population genetics

Population genetics

Population genetics is the study of the allele frequency distribution and change under the influence of the four evolutionary processes: natural selection, genetic drift, mutation and gene flow. It also takes account of population subdivision and population structure in space. As such, it attempts...

includes several hypotheses and theories regarding genetic diversity. The neutral theory of evolution proposes that diversity is the result of the accumulation of neutral substitutions. Diversifying selection

Disruptive selection

Disruptive selection, also called diversifying selection, is a descriptive term used to describe changes in population genetics that simultaneously favor individuals at both extremes of the distribution...

is the hypothesis that two subpopulations of a species live in different environments that select for different alleles

Allele
An allele is one of a series of different forms of a gene. The word is a short form of allelomorph, which was used in the early days of genetics to describe variant forms of a gene detected as different phenotypes...

at a particular locus. This may occur, for instance, if a species has a large range relative to the mobility of individuals within it. Frequency-dependent selection is the hypothesis that as alleles become more common, they become less fit. This is often invoked in host-pathogen interactions, where a high frequency of a defensive allele among the host means that it is more likely that a pathogen will spread if it is able to overcome that allele.

=====