

Hybridisation

Introduction

Hybridisation is the production of hybrids. A hybrid is an individual resulting from two genetically unlike parents. Scientifically speaking, a hybrid is the offspring of a cross between two different species, sub-species or varieties. In rare instances they can be the result of a cross between genera or families. Hybrids occur in nature and help to increase genetic variety. They may also be created artificially by ensuring that the gametes from two different organisms are fertilised.

Hybrids resulting from a cross between two different species are usually infertile (sterile). The chromosomes do not match up and gametes cannot be formed in meiosis. For example, a mating between a horse and a donkey produces sterile offspring known as mules.

When we talk about different kinds or types of dogs, cattle, roses or lettuces, we are referring to different varieties of the same species. Varieties of the same species show different combinations of characteristics and may look very different from each other. They can, however, successfully interbreed to form fertile offspring.

Hybrids are often described as having hybrid vigour—that is, they combine the best features of the parental organisms. In plants, hybrids may have larger flowers and better resistance to pests. In animals, hybrids are often larger or stronger. Cross-breeding to produce hybrids is widely used in agriculture and horticulture to improve animals and plants for human use.

Purpose

To describe an example of hybridisation within a species and explain the purpose of this hybridisation.

Procedure

Refer to page 127 Heinemann Biology HSC

Discussion

What is hybridisation?

This is the process of an animal or plant breeding with an individual of another species or variety.

What is hybrid vigour?

This is when the cross-bred individual shows qualities superior to those of both parents.

Labradoodle

The main attraction of the Labradoodle is the short, allergy friendly, non-smelling, non-shedding coat, their wonderful, kind and gentle disposition as well as their intelligence and tenacity. This breed has been produced from crossing the Labrador retriever with a standard Poodle.

Sugar Cane

The most productive sugar cane has been produced from a hybrid of two strains - noble cane and wild cane. Noble cane produced lots of sugar but was susceptible to disease. Wild cane produced almost no sugar but was very resistant to disease. The hybrid resulting from a mating of these two resulted in a plant that had large amounts of sugar and was disease resistant.

Conclusion

The purpose to understand hybridisation and provide an example with the purpose of the hybridisation was achieved and we are now more educated and have a higher understanding of this topic.