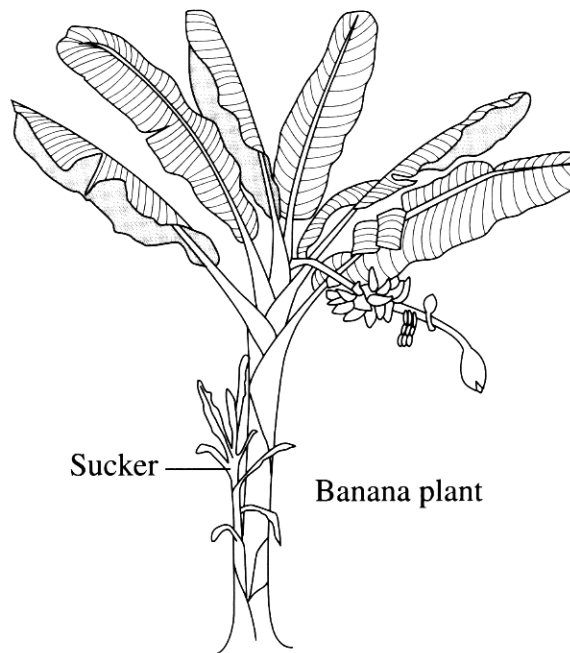


Marks

Question 24 (4 marks)

Traditionally, banana plants in Australia have been propagated asexually by cutting out and planting suckers from the adult plant.

4



There is a growing trend to produce disease-free plants in laboratories through a process of cloning from disease-free tissues from existing plants.

Assess the potential impact of this cloning process on the genetic diversity of banana plants in Australia.

Planting suckers from the adult banana plant is a natural type of cloning, but by using cuttings from different banana trees with different traits there is variety and thus natural selection within the banana trees. If plants start to be propagated from laboratories from "disease free tissues" from existing plants, the genetic variation of banana trees will decrease. Especially if a banana farmer uses the 'disease free' trees only. ~~By~~ By cloning the banana trees the genetic <sup>diversity</sup> ~~variation~~ will decrease. A population needs diversity for natural selection and to maintain biodiversity. If something were to go wrong with the cloned plants, and no others were used, the entire banana tree population would be affected and could have serious side effects. Through the cloning of banana plants the genetic diversity in Australia would decrease.