What is Asexual Reproduction in Plants?

Worksheet

Asexual reproduction occurs through vegetative propagation: runners (strawberries), bulbs (tulips, onions), tubers (potatoes), fragmentation (succulents), or layering. All offspring are clones-genetically identical to the parent.

Questions

1. Which of these is asexual reproduction in plants?

A) Pollination
B) Producing runners
C) Flower fertilization
D) Seed dispersal

2. What do potato 'eyes' on a tuber represent?

A) Storage of sugar
B) Bud nodes that grow into new plants
C) Root tips
D) Flower structures

3. Why might a gardener prefer asexual reproduction?

A) Creates genetic variation
B) Faster and produces clones of successful plants
C) Requires pollination
D) Produces seeds

4. Onions and tulips reproduce asexually through which structure?

A) Runners
B) Tubers
C) Bulbs
D) Fragmentation

5. A strawberry plant produces five runners in a season, each forming a new plant. How many genetically identical plants result from one parent in two seasons?

6. A gardener digs up a potato plant and finds 8 tubers. Each tuber has 6 'eyes' (buds). How many new plants could theoretically be produced from one tuber?

7. A succulent plant breaks into three pieces after falling. Each piece has roots and leaves. Can all three pieces become independent plants?

8. Define: What is asexual reproduction in plants?

9. Define: Name three methods of asexual reproduction in plants.

10. Define: Are offspring from asexual reproduction genetically identical to the parent?

Answer Key

1. B) Producing runners - Runners are stolons that form new plants asexually; pollination and fertilization are sexual.

2. B) Bud nodes that grow into new plants - Eyes are dormant buds; each can sprout into a new plant when conditions are right.

3. B) Faster and produces clones of successful plants - Asexual reproduction is fast and produces identical copies of the parent - useful for reliable crops.

4. C) Bulbs - Bulbs are underground storage structures that split into daughter bulbs, each growing into a clone plant.

5. Year 1: 1 parent + 5 new plants = 6 total. If each of the 5 new plants produces 5 runners in Year 2: 5 5 = 25 more plants. Total Year 2: 6 + 25 = 31 plants, all genetic clones of the original.

6. Each eye on a tuber can sprout into a complete new plant. One tuber with 6 eyes = 6 potential new plants. All offspring are genetically identical to the original potato variety.

7. Yes - fragmentation is successful in succulents. Each piece, if it has even minimal roots or stem nodes, can regenerate into a complete plant. All three new plants will be clones of the original.

8. Vegetative propagation where a single parent produces genetically identical offspring without gamete fusion.

9. Runners (stolons), bulbs, tubers, fragmentation, and layering are common methods.

10. Yes, they are clones - exact genetic copies of the parent plant.