

Water Dynamics in Plant Production, 2nd Edition

Multiple Choice Questions

Chapter 6 – The Root – the Plant’s Organ for Water Uptake

1. What is the cause of water flowing into a root?
 - (a) the potential difference between the water in the root and the water in the soil
 - (b) mass flow
 - (c) rain moving down through the soil
 - (d) diffusion
2. What processes are important for nutrient ions moving through the soil to enter a plant root? (There may be more than one correct answer.)
 - (a) mass flow
 - (b) diffusion
 - (c) root interception
 - (d) osmosis
 - (e) all of the above
3. Mucigel is:
 - (a) the correct term to describe the mucilage released from roots
 - (b) the combination of mucilages derived from roots and rhizobacteria
 - (c) a special material released by roots under drought stress
 - (d) none of the above
4. Suberized lamellae can impart a degree of resistance to water movement through cell walls. Which of the following root tissues are noted for the presence of such structures? (There may be more than one correct answer.)
 - (a) epidermis
 - (b) cortex
 - (c) exodermis (hypodermis)
 - (d) endodermis
 - (e) parenchyma cells of the stele
5. Root distribution in a soil profile is important for the uptake of water and nutrients. In an otherwise uniform soil, which of the following statements are true?
 - (a) Roots are *always* found in greatest numbers near the soil surface.
 - (b) The number of roots *always* declines with rooting depth.
 - (c) Rooting density declines with the amount of plant-available water.
 - (d) The depth of root development increases with the amount of plant-available water in the soil.