

Postharvest Sample Questions

Sample Questions - Composition of Horticultural Crops Compositional Changes During Maturation & Ripening

List the factors that influence composition of fruit and vegetables.

What are the key chemical constituents that contribute to each of the following changes taking place in a ripening fruit, e.g., a banana (ignoring the enzymes that catalyze the changes)?

- a. Color change
- b. Texture change
- c. Taste change
- d. Characteristic aroma
- e. Increased decay susceptibility

Describe how some of the main chemical constituents within fruits or vegetables might change during ripening or maturation?

How is the carbohydrate content of fresh fruits and vegetables related to their texture, taste, and food value?

What is the significance of proteins to the quality of fresh fruits and vegetables?

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What is the significance of lipids to the quality of fresh fruits and vegetables?

What is the significance of organic acids to the quality of fresh fruits and vegetables?

List the constituents that influence color of fresh horticultural crops during postharvest handling.

What is the significance of carotenoids to the quality of fresh fruits and vegetables?

Discuss briefly the relationships between pigments and quality of fruits and vegetables.

What is the significance of phenolic components to the quality of fresh fruits and vegetables?

How can light influence the composition of fresh horticultural crops (e.g. potato)?

Give two examples each of water-soluble and lipid-soluble vitamins found in fresh fruits and vegetables. Which are more susceptible to degradation during postharvest handling?

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Describe how one commodity may have lower vitamin C content, but supply a greater proportion of Vitamin C to the populations' diet?

Match the following chemical constituents with the correct statement.

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|----|---------------|---|
| a) | carbohydrate | _____ mostly red, orange and yellow pigments |
| b) | suberin | _____ high content a major reason why food poisoning organisms less likely to affect fruits than vegetables |
| c) | organic acids | _____ most abundant chemical constituent in plants on a dry weight basis |
| d) | ascorbic acid | _____ vitamin related to yellow-orange color of fruits and vegetables. |
| e) | starch | _____ most abundant water-soluble vitamin |
| f) | protein | _____ major storage compounds in climacteric fruits |
| g) | carotenoids | _____ highest levels found in legumes |
| h) | vitamin A | _____ protects underground organs from water loss and decay |
| i) | lignin | _____ found in association with fiber formation |
| j) | ethylene | _____ the most abundant volatile component |

List four nutrient compounds that are present in relatively high concentrations in most fruits and vegetables.