

PLANT PHYSIOLOGY Lecture 13 - Pentose Phosphate Pathway (Shunt)

- I. Purpose of pentose phosphate pathway**
 - A. Interwoven with glycolysis**
 - 1. Occurs in the cytosol
 - 2. Some intermediates found in Calvin cycle and in glycolysis
 - 3. **Considered as an alternate route to compounds subsequently degraded by glycolysis
 - B. Key intermediates needed for other metabolism**
 - 1. Erythrose-4-phosphate
 - a) Essential for phenolics (lignin, flavonoids, anthocyanins)
 - 2. Ribose-5-phosphate
 - a) Essential for producing ribose and deoxyribose (RNA and DNA)
 - C. Another way of getting energy from glucose - NADPH**
 - 1. Can be oxidized in plant mitochondria to make ATP
 - 2. Needed for fatty acid and isoprenoid synthesis
- II. The pentose phosphate pathway:**