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Developed by:
Centre for Instructional Design and Technology
Open University Malaysia

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INTRODUCTION

In the last chapter, we have compared between the two vascular plants gymnosperms and angiosperms. Now, let us look further in the general characteristics and the classification of angiosperms.

OBJECTIVES

By the end of this chapter, you should be able to:

1. summarize the characters that distinguish angiosperms from other plants;
2. summarize the features that distinguish dicots and monocots;
3. briefly describe the life cycle of angiosperms and double fertilization; and
4. discuss the evolutionary adaptations of angiosperms.

5.1 INTRODUCTION

The term angiosperm is derived from the Greek meaning 'seed enclosed in a vessel or case'. The ovules of angiosperms are protected. In other words, angiosperms are flowering plants producing their seeds within a fruit.

The angiosperms are the most successful, abundant and widely distributed of the seed-bearing plants. They are of outstanding economic importance, being the source of many durable hardwoods, most of our vegetable foodstuffs and about one-quarter in monetary value of commercially marketed drugs (Bell and Hemsley, 2000). They have adapted to almost every habitat and with approximately 250,000 species, are Earth's dominant plants. They show remarkable diversity in growth form, morphology and physiology.

5.1.1 Characteristics of Angiosperms

Angiosperms are flowering plants that produce specialized reproductive structures called flowers and after a unique double fertilization process, seeds within fruits are formed.

The carpel is a primary feature that distinguishes angiosperms from gymnosperms and all other plants because it becomes part of the fruit. Double fertilization is a feature that angiosperms share with Gnetophyta. However, in flowering plants, the triploid nucleus (sperm plus polar nuclei) divides repeatedly and produces endosperm. The embryo in seeds of angiosperms usually derives its nutrients from the endosperm and not the female gametophyte as in gymnosperms. Another difference is that flowering plants have no antheridia or archegonia.