

ENGLISH IN FOCUS

English in Agriculture

ALAN MOUNTFORD

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ENGLISH IN FOCUS

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Introduction

The aim of this book is to develop a basic knowledge of how English is used for communication in dealing with topics in agriculture. It is intended for students who already know how to handle the common English sentence patterns but who need to learn how these patterns are used to convey information and to conduct coherent discussion.

The exercises direct the student's attention to certain features of English which are commonly used in textbooks about agriculture. The aim is to provide the student with a strategy for reading more difficult texts in this subject area and to prepare him for making effective use of English in his own writing.

Although the emphasis is on English as a medium of expression for communicating ideas about agriculture, the basic elements of the language have not been neglected. Pattern practice is provided, particularly in the Language in Use and Grammar sections of each unit, but this kind of work is always presented in relation to a communicative context and not simply as an exercise in making sentences for their own sake.

This book does not aim at teaching the subject-matter of agriculture, and it does not aim at teaching grammatical structures and vocabulary as such. Its purpose is to show how language is used as a medium for the study of agriculture, and so to give students a grounding in one particular set of communication skills in English.

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1 The Parts of a Plant and their Functions

I READING AND COMPREHENSION

¹A plant is a living organism. ²It is made up of different parts, each of which has a particular purpose, or specialized function. ³If one part of the plant is not functioning properly the whole plant will suffer. ⁴But we may cut flowers off the plant or prune the roots. ⁵Such damage is only temporary and so the plant will continue to grow.

Study the following statements carefully and write down whether they are true or not true according to the information expressed above. Then check your answers by referring to the solutions at the end of the passage.*

- (a) Different parts of a plant have specialized functions.
- (b) Not all parts of a plant need function properly.
- (c) If we cut flowers off a plant, the whole plant will suffer.

⁶The basic parts of a plant are the root system, which is below the ground, and the shoot system above. ⁷The root of a plant has two main functions. ⁸It takes in, or absorbs, water and minerals from the soil through the root hairs, which are single cells near the tip of each root. ⁹The other main function of the root is to hold, or anchor, the plant firmly in position in the soil.

- (d) The shoot system of the plant is below the ground.
- (e) Water and minerals are absorbed through the root hairs.
- (f) The plant is anchored in the soil by the root system.

¹⁰Plants such as sugar beet and carrots are able to store food in their roots. ¹¹In this way they can keep growing for more than one season. ¹²In addition, plants such as clover and lucerne, known as 'legumes', have special bacteria which live on the roots. ¹³These simple forms of life take nitrogen out of the air which is in the soil. ¹⁴Such leguminous plants are usually ploughed under the soil. ¹⁵By doing this the soil is made more fertile.

- (g) Carrots can keep growing for more than one season.
- (h) Special bacteria live on the roots of all plants.
- (i) The soil is made fertile by ploughing clover and lucerne under the soil.

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¹⁶The shoot system above the ground consists of the stem, the leaves, flowers and fruit. ¹⁷One of the functions of the stem is to support the plant. ¹⁸Another important function is to enable water and minerals to pass up from the roots to the leaves and flowers. ¹⁹Organic materials such as sugar travel down the stem to the roots. ²⁰The leaves grow out of the side of the stem. ²¹Their main job is to make food for the plant by the process known as photosynthesis. ²²For this process sunlight is necessary. ²³Water from the soil and carbon dioxide from the air are converted into sugars and other carbohydrates. ²⁴During the process oxygen is formed and released into the air. ²⁵The flower contains the reproductive organs of the plant. ²⁶The stamens produce the male sex cells, or spermatia, ²⁹ which are carried in the pollen grains. ²⁷The carpel produces the female sex cells, or ovules. ²⁸The fruit, the ripened ovary of the flower, encloses the seeds and protects them while they are developing. ²⁹ The seed itself consists of an embryo and foodstore. ³⁰The embryo is the part which will develop into another plant and the foodstore is necessary to provide nourishment for the young plant while it is growing.

Solutions

Add words or phrases from the text to complete the argument which shows whether the comprehension check is TRUE or NOT TRUE. Note that a dotted line requires a phrase to be added, and a straight line _____ requires a word to be added. Numbers refer to the sentences in the text. The first one has been done as an example.

- (a) Each of the different parts of a plant has a particular purpose. (2)
Each of the different parts of a plant has a particular purpose or specialized function. (2)

∴ a particular purpose = a specialized function.

∴ Each of the different parts of a plant has a specialized function.

= *Different parts of a plant have specialized functions.*

- (b) The whole plant will suffer if ONE part is not (3)

i.e. If ALL are functioning properly the whole plant will _____ suffer.
If all parts of the plant are functioning properly the whole plant will not suffer.

i.e. All parts of the plant DO NEED to function properly.

* The following symbols are used in the solutions:

i.e. that is to say

e.g. for example

= equals/means the same as

≠ does not equal/mean the same as

∴ therefore

- (c) We may off the plant. (4)
As this damage (i.e. cutting flowers) is only temporary, the plant
(5)
i.e. The plant will continue to grow if we off it.
i.e. The whole plant will not _____ if we cut flowers off it.
= If we cut flowers off the plant, the whole plant will NOT suffer.
- (d) A plant has a root system, which is below the ground, and a shoot system, above (6)
i.e. A plant has a, which is above the ground.
i.e. The shoot system of a plant is above the ground.
- (e) The root takes in, or _____, water and minerals from the soil through the root hairs. (8)
i.e. The root absorbs through the root hairs.
= Water and minerals _____ absorbed by the root through the root hairs.
Water and minerals are absorbed by the root through the root hairs.
- (f) The roots hold, or _____, the plant firmly in position in the soil. (9)
i.e. The plant is anchored firmly in position in the soil by
the root = the root _____ (6)
∴ The plant is anchored in the soil by the root system.
- (g) Both carrots and sugar beet are able to (10)
By storing food in their roots they can (11)
i.e. can keep growing for more than one season.
∴ Carrots can keep growing for more than one season.
- (h) Special bacteria live in the roots of plants such as (12)
i.e. Clover and lucerne are examples of plants which have living on their roots.
i.e. SOME plants have special bacteria which
= Special bacteria live on the roots of
Special bacteria live on the roots of SOME plants.
i.e. Special bacteria do NOT live on the roots of ALL plants.
- (i) Clover and lucerne i.e. _____ plants are usually ploughed under the soil. (14)
By ploughing leguminous plants under the soil, the soil is made (15)
i.e. The soil is made MORE fertile by ploughing leguminous plants such as under the soil.
≠ The soil is made fertile by ploughing clover and lucerne under the soil.

EXERCISE A Contextual reference

1. In sentence 5, *such damage* refers to:
(a) cutting flowers off the plant

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- (b) pruning the roots of the plant
 - (c) both cutting the flowers and pruning the roots
2. In sentence 8, *it* refers to:
 - (a) the shoot system
 - (b) the root of a plant
 3. In sentence 11, *they* refers to:
 - (a) the roots of plants
 - (b) plants such as sugar beet and carrots
 4. In sentence 13, *these simple forms of life* refers to:
 - (a) special bacteria
 - (b) legumes
 - (c) roots

EXERCISE B *Rephrasing*

Rewrite the following sentences replacing the words printed in italics with expressions from the text which have the same meaning.

EXAMPLE

The roots of plants *take in* water and minerals from the soil.

= The roots of plants *absorb* water and minerals from the soil.

1. *The single cells near the tip of each root* increase their surface area by extending outwards from the root.
2. The root *holds* the plant firmly in position in the soil.
3. Some plants have *simple forms of life* living on their roots.
4. We can improve the fertility of the soil by ploughing under *plants such as clover and lucerne*.
5. Sunlight provides the energy for the process of *converting water from the soil and carbon dioxide from the air into sugars and other carbohydrates*.
6. While growing, the seeds are protected by the *ripened ovary of the flower*.

EXERCISE C *Relationships between statements: consequence*

Study the following sentences:

Such damage is only temporary. The plant will continue to grow.

The relationship between the statements expressed in these two sentences is one of *consequence*. We can express this relationship in various ways:

- (i) by joining the sentences together to make one sentence:

EXAMPLES

Such damage is only temporary *and so* the plant will continue to grow.
(see text, sentence 5)

OR *As* } such damage is only temporary, the plant will continue to
Since }
 grow.

(ii) by linking the two sentences as follows:

EXAMPLES

Such damage is only temporary. The plant will *therefore* } continue
consequently }
thus }
 to grow.

OR Such damage is only temporary. *Consequently,* } the plant will con-
Therefore, }
Thus, }
 tinue to grow.

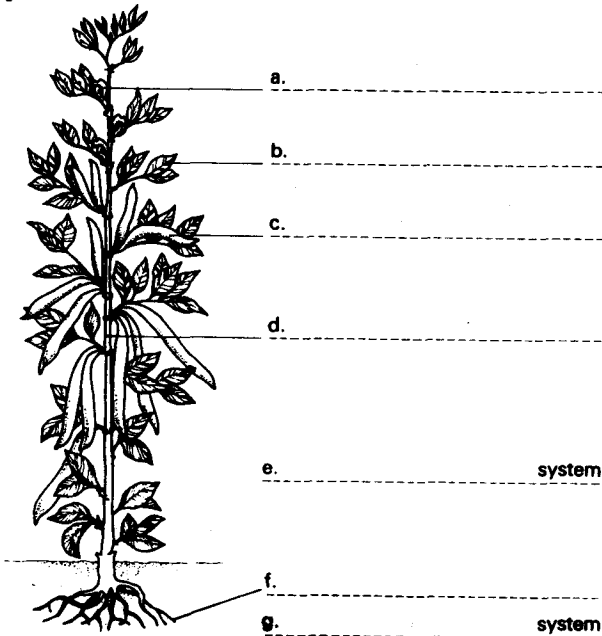
Relate the sentences indicated with the following expressions as in the examples above. Write out both sentences. Replace and re-order the words in the sentences where necessary.

- (a) 10 + 11: (i) consequently (ii) thus (iii) and so (iv) since.
- (b) 14 + 15: (i) thus (ii) and therefore (iii) consequently.

II LANGUAGE IN USE

EXERCISE A *Labelling a diagram*

Label the parts indicated in the diagram below of a mature bean plant using words and phrases from the text.



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EXERCISE B *The definition of parts of a plant*

We can *define* different parts of a plant by

- (a) naming them,
- (b) stating the class they belong to,
- (c) describing their function.

EXAMPLES

- (i) NAME: root hairs
CLASS: parts of a plant
FUNCTION: absorb water and minerals from the soil
DEFINITION: *The root hairs are the parts of a plant which absorb water and minerals from the soil.*

- (ii) NAME: stem
CLASS: part of a plant
FUNCTION: supports the shoot system
DEFINITION: *The stem is the part of a plant which supports the shoot system.*

Using the information below, write out complete definitions of each part of a plant as in the example above.

- (a) NAME: fruit
CLASS: part of a plant
FUNCTION: protects the ripened, or matured, ovary
- (b) NAME: stamens
CLASS: parts of a flower
FUNCTION: produce the male sex cells, or spermata
- (c) NAME: carpel
CLASS: part of a flower
FUNCTION: produces the female sex cells, or ovules
- (d) NAME: embryo
CLASS: part of a seed
FUNCTION: will develop into an adult plant
- (e) NAME: leaves
CLASS: parts of a plant
FUNCTION: manufacture sugars and other carbohydrates by photosynthesis
- (f) NAME: root
CLASS: part of a plant
FUNCTION: anchors the plant in the soil and absorbs water and minerals
- (g) NAME: sepals
CLASS: parts of a flower
FUNCTION: protect the flower while it is in the bud stage
- (h) NAME: foodstore
CLASS: part of a seed
FUNCTION: produces the nourishment for the growing embryo

EXERCISE C *General statements of function*

We can make general statements about the function of different parts of a plant by naming them and saying what their function is but without saying what class they belong to.

EXAMPLE

NAME: root hairs

FUNCTION: absorb water and minerals from the soil

GENERAL

STATEMENT: The root hairs absorb water and minerals from the soil.

Answer questions about what the following parts of a plant or flower or seed do by making general statements. Use the information from Exercise B, above.

What do the root hairs do?

Statement of function

The root hairs absorb water and minerals from the soil.

OR What is the function of the root hairs?

OR *The function of the root hairs is to absorb water and minerals from the soil.*

(a) stem

(d) embryo

(g) sepals

(b) fruit

(e) leaves

(h) foodstore

(c) stamens

(f) root

III GRAMMAR

EXERCISE A *The forms of definitions*

Refer to Exercise B in Section II above.

Definitions often take one of the following forms:

1. [A] *is/are, may be defined as* [B] *which* [C].

EXAMPLE

[A The embryo] *is, may be defined as* [B the part of a flower] *which* [C will develop into another plant].

The embryo *is* the part of a flower *which* will develop into another plant.

OR The embryo *may be defined as* the part of a flower *which* will develop into another plant.

2. [B] *which* [C] *is/are called, is/are known as* [A].

EXAMPLE

[B The part of a flower] *which* [C will develop into another plant] *is called, is known as* [A the embryo].