

# 14 TO DISSECT OUT ENDOSPERM HAUSTORIA FROM *CUCUMIS SATIVUS*

---

## 14.1 INTRODUCTION

---

Endosperm is the nutritive tissue for the developing embryos in angiosperms. The endosperm is the product of double fertilisation and is usually triploid. Some times it is consumed by the developing embryo or it may persist in mature seed to support the growth of embryo during germination. Endosperm of some species develops a special structure called haustorium which modifies variously and tremendously to get the metabolites for developing embryo. Haustoria which develops at chalazal end are known as chalazal haustoria and the ones that develop at micropylar end are micropylar haustoria. In some plants haustoria develops at both the ends. In *Cucumis sativus* haustoria develops at the chalazal end. The endosperm is of nuclear type. The chalazal region extends into a long tubular haustorium with flattered spoon shaped tip.

Before doing this experiment you should go through unit 4 of LSE-06.

### Objectives

After doing this experiment you should be able to:

- recognise endosperm haustoria and describe its structure and possible functions.

---

## 14.2 MATERIALS REQUIRED

---

Dissecting microscope

Needles

*Cucumis sativus* seed at various stages of development

1.5% saffranin

Spirit lamp

Slides

Cover slips

---

## 14.3 PROCEDURE

---

You will be provided the seeds of *Cucumis sativus* at various stages of ripening.

1. Split open the seed in two parts with the help of a blade or scalpel and you will be able to see the gelatin-like endosperm haustorium attached at the chalazal end.
2. With the help of forceps and needle gently take out the haustorium and place it on a clean slide. Take out the endospermic haustoria carefully so that globular embryo at the micropylar end remains intact. Coenocytic tail like structure should be observed at the chalazal end.
3. Add few drops of saffranin/acetocarmine and heat a little. Then place a coverslip carefully and observe the morphology of the structure.

---

## 14.4 OBSERVATIONS

---

You should be able to observe a haustorium with a distinct globular end followed by long tubular region. The tubular region is coenocytic region. This region contains dense cytoplasm and numerous nuclei. The globular end is formed of cells. Draw a labelled

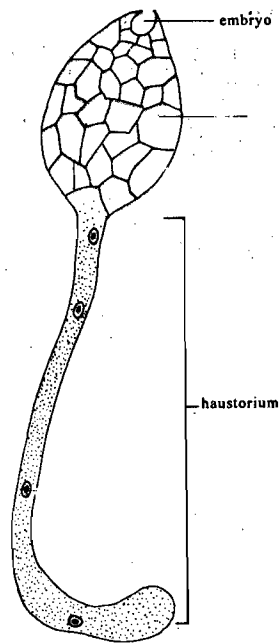


Fig. 14.1: Endosperm haustoria.

**SAQ**

1. What is the most common ploidy nature of the endosperm?

.....  
.....  
.....  
.....

2. What is the role of endospermic haustoria?

.....  
.....  
.....  
.....

3. Cite few examples of endospermic haustoria.

.....  
.....  
.....  
.....

---

**14.5 PRECAUTIONS**

---

1. Dissect out endosperm alongwith the embryo and haustorium carefully so that the entire structure is transferred to the slide.
2. Take care not to overheat the slide.