

## Experiment 1: Effects of light on growth and aroma

### Procedure

1. Plant seeds in two containers. Use container with a transparent and colorless lid.
2. Place one of the containers into a location that gets light, such as under desk lamp. Cover the other container completely with aluminum foil to protect it from light. Place shaded containers next to unshaded containers. Grow for 5 to 7 days.
3. Make a hypothesis. What do you think will happen? Try to include something that you can measure.



Written by  
Professor Kouichi SOGA,  
Osaka City University

### Observations

Compare the plants grown in the light with those in dark. Sketch or take a picture of what you see. Perform the measurements needed to address your hypothesis. Was your hypothesis accepted or rejected? How did the light affect growth and aroma?

Identify some other characteristics that you can measure. Which characteristics were affected by light?

### Plan your experiment

Using the methods you learned in the activity above, design and carry out your own experiment. Questions you might consider include how intermediate intensity of light would affect growth and aroma, whether color of light affect the growth and aroma, or how other variables affect growth and aroma (temperature, water condition, etc.).

## Experiment 2: Effects of light on growth direction

### Procedure

1. Plant seeds in two containers. Use a transparent and colorless container.
2. Cover the containers completely with aluminum foil to protect those from light. Grow for 3 to 4 days.
3. Partially remove the aluminum foil on one of the sides of one container, so that the plant is exposed to light only from one of the sides. Keep the other container protected from light. Grow one more day.
4. Make a hypothesis. What do you think will happen? Try to include something that you can measure.

### Observations

Compare plants grown in the dark with those with light from one side. Sketch or take a picture of what you see. Perform the measurements needed to address your hypothesis. Was your hypothesis accepted or rejected? How did the light affect growth direction?

### Plan your experiment

Using the methods you learned in the activity above, design and carry out your own experiment. Questions you might consider include whether color of light affect the growth direction, or are there other factors that change the direction of growth.