

Yeast Blowup

Is yeast alive?

What does yeast need to live?

How does yeast help bread rise?

1. In three 125 ml Erlenmeyer flasks place 1/2 teaspoon of flour, 1/2 teaspoon sugar, 1/2 teaspoon yeast.
2. In the one flask add cold tap water to the 100 ml mark (60° F, 15° C). In the second flask add warm water to the 100 ml mark (100° F, 38° C). In the third flask add boiling water to the 100 ml mark (212° F, 100° C). Swirl the flasks.
3. Place a balloon over each flask (three different colors help for identification).

Observations:

- a. What do you observe in the first 5 minutes?
- b. What do you observe in 20 minutes?
- c. What do you observe in 60 minutes?
- d. What is blowing up the balloons? (carbon dioxide from yeast respiration)
- e. What was the best temperature? Why?
- f. What do you think would happen if twice the sugar was added? How about half as much?
- g. Yeast is added to bread dough. Why does the bread rise?
- h. Will temperature affect how quickly bread will rise?
- i. Can you see evidence of carbon dioxide bubbles in bread?
- j. If you add more yeast to bread will it rise faster?

Variations:

Vary the sugar, substitute whole wheat flour, use no flour, no sugar, heat the flask with cold water, test instant yeast versus standard yeast, etc.

