Name: _____ Date: _____

Cabbage That Sours Itself in a Crock

Circle group

Sauerkraut has just two things in it. They are shredded cabbage and salt. It has no vinegar. It is not cooked. But after a week or two in a crock, the cabbage turns sour. Tiny living things do the work.

First, the cook mixes salt into the cabbage and squeezes it. Salt pulls water out of the leaves. Soon the cabbage sits in salty water called brine. The cook presses the cabbage down so it stays under the brine.

This matters because of air. Under the brine there is very little oxygen. A kind of bacteria that does not need oxygen grows well there. These lactic acid bacteria are already on the cabbage leaves. They eat the sugars in the cabbage. They make lactic acid, a sour acid that is also in yogurt. The acid makes the sauerkraut tangy. It also makes the crock a hard place for spoiling germs.

This is called fermentation. A cool room makes it slow. A warm room makes it fast. When the taste is right, the cook puts the crock in the refrigerator. The cold slows the change almost to a stop.

Questions

1. What two things does sauerkraut start with?

_____

_____

2. What is brine?

_____

_____

3. Why must the cabbage stay under the brine?

_____

_____

4. What do the lactic acid bacteria eat?

_____

_____

5. What does the acid do besides make the cabbage tangy?

_____

_____

6. Why does the cook move the crock to the refrigerator?

_____

_____

Words to know

crock: a heavy pot made of baked clay
brine: water with a lot of salt in it
oxygen: the gas in air that most living things breathe
lactic acid: a sour-tasting acid made by certain bacteria
fermentation: a change in food caused by tiny living things

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Cabbage That Sours Itself in a Crock

Triangle group

Sauerkraut starts with just two ingredients: shredded cabbage and salt. There is no vinegar and no cooking. Yet after a week or two in a crock, the pale shreds turn tangy and sour. The change is done by living things too small to see.

First, the cook mixes the salt into the cabbage and squeezes it with clean hands. Salt pulls water out of the leaves, and soon the cabbage is sitting in its own salty liquid, called brine. The shreds are pressed down and weighted so that they stay under the brine.

That step matters because of air. Under the liquid there is very little oxygen, and a kind of bacteria that does not need oxygen can thrive there. These lactic acid bacteria were already living on the cabbage leaves. They eat the natural sugars in the cabbage and make lactic acid, the same sour-tasting acid found in yogurt. The acid gives the sauerkraut its tang, and it also makes the crock a hard place for spoiling germs to live.

This process is called fermentation. Cooler rooms make it slower, and warmer rooms make it faster. When the taste is right, the crock goes into the refrigerator, where the change slows almost to a stop.

Questions

1. What are the two ingredients that sauerkraut starts with?

_____

_____

2. What is brine?

_____

_____

3. Why must the cabbage stay under the brine?

_____

_____

4. What do the lactic acid bacteria eat?

_____

_____

5. What does the lactic acid do besides add a tangy taste?

_____

_____

6. Why would a cook move the finished crock to the refrigerator?

_____

_____

Words to know

crock: a heavy pot made of baked clay
brine: water with a lot of salt in it
oxygen: the gas in air that most living things breathe
lactic acid: a sour-tasting acid made by certain bacteria
fermentation: a change in food caused by tiny living things

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Cabbage That Sours Itself in a Crock

Square group

Sauerkraut begins with only two ingredients, shredded cabbage and salt. It contains no vinegar, and it is never cooked. Nevertheless, after a week or two in a crock, the pale shreds become tangy and sour, and the transformation is carried out entirely by living organisms far too small to be seen.

To begin, the cook works the salt into the cabbage and squeezes it firmly with clean hands. The salt draws water out of the leaves, and before long the cabbage is sitting in its own salty liquid, which is known as brine. The shreds are then pressed down and weighted so that they remain beneath the surface of the brine.

This step matters a great deal because of air. Beneath the liquid there is hardly any oxygen, and a particular group of bacteria that does not require oxygen can flourish there. These lactic acid bacteria were already living on the cabbage leaves. They feed on the natural sugars in the cabbage and produce lactic acid, the same sour-tasting acid found in yogurt. The acid gives sauerkraut its tang, and it also turns the crock into an unwelcoming place for the germs that cause spoilage.

The whole process is called fermentation. Cooler rooms make it proceed more slowly, while warmer rooms speed it up. Once the flavor is exactly right, the crock is moved to the refrigerator, where the change slows to almost nothing.

Questions

1. Which two ingredients does sauerkraut begin with?

_____

_____

2. What is the brine in the crock?

_____

_____

3. Why must the cabbage be weighted so it stays beneath the brine?

_____

_____

4. What do the lactic acid bacteria feed on?

_____

_____

5. Besides giving a tang, what else does the lactic acid do?

_____

_____

6. Why would a cook move the finished crock to the refrigerator?

_____

_____

Words to know

crock: a heavy pot made of baked clay
brine: water with a lot of salt in it
oxygen: the gas in air that most living things breathe
lactic acid: a sour-tasting acid made by certain bacteria
fermentation: a change in food caused by tiny living things

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: Cabbage That Sours Itself in a Crock

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: Cabbage That Sours Itself in a Crock

Easier · 188 words · Flesch-Kincaid grade 3.2

1. Shredded cabbage and salt.
2. The salty water that the salt pulls out of the cabbage.
3. There is little oxygen there, which helps the helpful bacteria grow.
4. The sugars in the cabbage.
5. It makes the crock a hard place for spoiling germs.
6. The cold slows the change almost to a stop, so the taste stays right.

Triangle: Cabbage That Sours Itself in a Crock

This passage · 207 words · Flesch-Kincaid grade 5.7

1. Shredded cabbage and salt.
2. The salty liquid that the salt pulls out of the cabbage.
3. There is little oxygen under the liquid, which helps the helpful bacteria thrive.
4. The natural sugars in the cabbage.
5. It makes the crock a hard place for spoiling germs to live.
6. The cold slows the change almost to a stop, so the taste stays right.

Square: Cabbage That Sours Itself in a Crock

Harder · 235 words · Flesch-Kincaid grade 8.1

1. Shredded cabbage and salt.
2. The salty liquid that the salt draws out of the cabbage leaves.
3. There is hardly any oxygen under the liquid, so the helpful bacteria can flourish.
4. The natural sugars in the cabbage.
5. It makes the crock an unwelcoming place for germs that cause spoilage.
6. The cold slows the change to almost nothing, so the flavor stays just right.