Take Care when Sharing Friendship Bread

(April, 2011) A popular type of bread to make and share is known as 'Friendship Bread.' Friendship bread is made using a yeast-based sourdough starter that is kept for an extended period of time, often passing from family to family. Another type of bread that is increasingly popular is an extended-rise no-knead bread.

Recent nationwide foodborne illness outbreaks have been linked to traditional bread-making ingredients: first, contaminated flour was tentatively linked to the presence of *E. coli* O157:H7 in Nestle cookie dough that sickened at least 69 people in 30 states and led to a nationwide recall of prepared, refrigerated cookie dough in 2009; more recently, thousands of eggs were recalled in 2010 due to possible contamination with *Salmonella*. Since no one wants to share illness as they share friendship bread starter, or sicken their family as they prepare an extended-rise bread, it's time to 'think safety' when preparing, or sharing, these products.

Friendship bread. Friendship bread, sometimes referred to as Amish Friendship Bread, is a yeast-raised bread that contains a sourdough starter. In order to prepare the bread, a starter is first made from yeast, water, flour, sugar and milk. The yeast/water/flour/sugar/milk mixture is allowed to stand at room temperature for up to 10 days, with periodic additions of additional flour, sugar and milk. On the 10th day, the starter is distributed to friends who are instructed to add more flour, sugar and milk in a set pattern and continue the fermentation process. At set intervals, starter can be removed from the fermentation and used as an ingredient to make a loaf of Friendship bread. The prolonged fermentation at room temperature is necessary for the production of the characteristic tangy quality of the starter, but it raises food safety concerns due to the presence of milk and the heightened concern over the safety of bakery doughs in general.

Extended rise no-knead bread. A convenient bread-making method involving prolonged fermentation of no-knead dough has become popular in recent years. In this process, a mixture of yeast, salt, flour and water are allowed to stand for 12 to 24 hours at room temperature at which time additional flour is added, a loaf is shaped, and the rising and baking process continue. As with friendship breads, the extended rise time presents certain food safety challenges.

Research update. A recent study by scientists at Virginia State University considered the possible for the two pathogens, *Salmonella* and *Staphylococcus aureus* to grow in a bread dough during prolonged fermentation. The dough consisted of flour, water, salt, and yeast. A mixed-strain inoculum of *Salmonella* or *Staphyloccus aureus* was added to the mixture and the rate of growth of the pathogens, if any, was tacked over time. *Salmonella* is an infectious agent and *S. aureus* is a toxin producer.

In this study, growth of both pathogens over time was significant. The number of *Salmonella* in the dough doubled within 4 hours and continued a steady increase over the 24-hour fermentation period. A similar pattern was seen with *S. aureus.*

Implication for home bakers. The purpose of the extended-hold time for the two types of breads varies. In the Friendship-style bread, a starter culture is prepared by prolonged holding at room temperature. While this starter contains yeast, the primary reason to hold the mixture at room temperature is to allow bacteria naturally present in the ingredients to produce acids which lend a tangy flavor to the final bread and promote leavening of the loaf. Properly prepared starters are safe because they become acidic due to the fermentation action of lactic acid-forming bacteria present in the mixture. These bacteria and the acid environment formed inhibit the growth of other bacteria, but do allow yeast, if added, to grow and help leaven bread products. Extended-rise no-knead loaves lack the protection of the lactic acid formed by a fermenting starter. In extended-rise dough, the prolonged holding is designed to facilitate the formation of the dough matrix by allowing gluten proteins to fully hydrate and align in the watery dough.

Steps to food safety:

- **Choose the proper starter.** It is difficult to prepare a sourdough starter from 'scratch'. Microorganisms naturally present in the ingredients may not be the ideal ones for producing a good starter, and will be slower to produce the acid which is needed for safety. Instead of the 'friendship style' starter, choose one that contains yogurt or cultured buttermilk as an ingredient, placing acid-producing bacteria in the starter from the beginning and helping to inhibit any pathogens or spoilage bacteria which may be present.

- **Check to see that a starter is still good.** A good starter has a pleasant sour smell and is bubbly. Discard any starters which smell bad, turn reddish or orange in color, or grow mold. Never taste the raw starter, use your other senses to detect if the starter is still good.

- **Store a starter in the refrigerator.** Where possible, choose recipes which allow for the maintenance of the starter in the refrigerator. Try a recipe that provides for an initial fermentation of up to 8-10 hours at room temperature, after which the starter is maintained in the refrigerator. Even when a recipe does not suggest refrigeration, once activated, the starter can be placed in the refrigerator and simply warmed to room temperature for a few hours before baking.

- **Take care with extended rise, non-starter doughs**. If preparing an extended-rise dough which does not contain a starter, never taste the raw dough, take extra care to maintain kitchen cleanliness and prevent cross contamination, and cook the dough thoroughly.

References:
Safety of Amish Friendship Bread and Similar Sourdough Products
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