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## Canning Pumpkin Butter and Mashed or Pureéd Squashes

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Home canning is *not recommended* for pumpkin butter or any mashed or pureed pumpkin or winter squash. In 1989, the USDA's Extension Service published the *Complete Guide to Home Canning* that remains the basis of Extension recommendations today, found in the September 1994 revision. The only directions for canning pumpkin and winter squash are for cubed pulp. In fact, the directions for preparing the product include the statement, "**Caution: Do not mash or puree.**"

In accordance with the USDA recommendations, the University of Georgia Cooperative Extension Service does not have a recommendation for canning these products either. There are not sufficient data available to allow establishing safe processing times for any of these types of products. It is true that previous USDA recommendations had directions for canning mashed winter squash, but USDA withdrew those recommendations and any publications preceding the *Complete Guide to Home Canning* (September 1994) are considered out of date.

Some of the factors that are critical to the safety of canned pumpkin products are the viscosity (thickness), the acidity and the water activity. Studies conducted at the University of Minnesota in the 1970's indicated that there was too much variation in viscosity among different batches of prepared pumpkin purees to permit calculation of a single processing recommendation that would cover the potential variation among products (Zottola et. al, 1978). Pumpkin and winter squash are also low-acid foods (pH>4.6) capable of supporting the growth of *Clostridium botulinum* bacteria which can cause the very serious illness, *botulism*, under the right storage conditions. If the bacteria are present and survive processing, and the product has a high enough water activity, they can thrive and produce toxin in the product.

More recent research with pumpkin butter has been done at the University of Missouri. Pumpkin butter is mashed or pureed pumpkin that has had large quantities of sugar added to it, but not always enough to inhibit pathogens. Sometimes an ingredient such as vinegar or lemon juice is added to the formulation to increase the acidity (decrease the pH). However, pumpkin butters produced by home canners and small commercial processors in Missouri have had pH values as high as 5.4. In fact, the pH values seemed to be extremely variable between batches made by the same formulation (Holt, 1995).

It is not possible to evaluate a recipe for pumpkin or mashed squash for canning potential by looking at it. At this point, research seems to indicate variability of the products is great, and in several ways that raise safety concerns. It is best to freeze pumpkin butters or mashed squash.

## References

Extension Service, USDA. 1994. Complete Guide to Home Canning. AIB No. 539. U.S. Department of Agriculture, Washington, DC.

Holt, D. September 22, 1995. Re: Pumpkin butter. Email message to fnspec\_mg@ecn.purdue.edu.

Zottola, E. A., Wolf, I.D., Norsiden, K.L. and D.R. Thompson. 1978. Home canning of food: Evaluation of current recommended methods. Jn. of Food Science 43:1731.

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