

'Ulu Flour Production

A Visual Flowchart

Receiving



Fresh 'ulu is delivered at the starchy, firm maturity stage and without disease or damage by approved suppliers. Post-harvest handling and delivery methods follow Good Agricultural Practices (GAPs).

Storage



Fresh 'ulu is stored in a cool, dry room held between 41 and 55°F. This helps to slow fruit ripening and keep it firm without causing chill damage, which can discolor the flesh.

Sorting, washing, and sanitizing*



Fruit is sorted to remove any softened pieces, and power-washed to remove field debris and sap. Fruit is then sanitized by soaking for 1-2 minutes in a food safety-approved sanitizing solution. Keeper Pro at 50 ppm may be used for certified organic operations, or chlorine at 100-200 ppm for conventional.

Quartering



Fruit is quartered and placed in a citric acid bath to minimize oxidation. For "peeled" breadfruit flour, the skin and core are removed before quartering; for "whole" breadfruit flour, peel and core are left intact.

Milling



Dried 'ulu is milled in a certified kitchen. A hammermill with sifter screens HMS 0.020 and HMS ¼" provide particle or grain sizes appropriate for flour production.

Drying*



Shreds or slices are placed on a drying tray in a single layer and dehydrated between 140 to 165°F until crisp to the touch, with a water activity (aw) of less than 0.6. Exact time depends on dehydrator equipment and thickness of fruit on trays, and is usually between 6-8 hours. If desired, dried breadfruit can be stored in an airtight container for up to 6 months as sufficient volumes are consolidated for milling.

Slicing/ Shredding



Breadfruit quarters are thinly sliced or shredded using a commercial food processor.

Packaging



'Ulu flour is packed into airtight, food-grade bags or containers and labeled with lot code and/or date and package weight.

Storage



The finished product is cased and stored in either ambient, refrigerated, or freezer storage and protected from moisture until use or distribution. Shelf life in sealed packages is generally 6-12 months in ambient conditions and can be longer if stored at lower temperatures. Shelf life can be extended by keeping flour in the refrigerator.

Distribution



If selling 'ulu flour commercially, finished product is packed in clean shipping boxes and distributed or picked up by the customer.

*Denotes a critical control point (CCP), a step in the food production process where preventative measures can be applied to prevent, reduce, or eliminate a food safety hazard, such as bacterial growth.



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