



## "NYAM NEWS FROM THE CARIBBEAN FOOD AND NUTRITION INSTITUTE"

### ALTERNATIVES TO WHEAT FLOUR AND BREAD

#### THE VIRTUES OF WHEAT FLOUR

Dollar for dollar, wheat flour remains the best bargain for money as a staple food. Bread, the most popular wheat flour product, has virtually replaced local provisions at the breakfast table in most homes in the Caribbean. No doubt about it, the staple foods form the backbone of the diet in that they are the main source of energy and the cereals contribute significant protein and B vitamins.

Aside from being a major breakfast item, wheat flour features prominently in the lunch kits of all age groups, whether as bread, or in some other form such as crackers, bun/bulla, sweetbread or rock cake. In addition, the pastry industry plays a prominent role in providing popular sweet snacks and desserts. In a head-to-head comparison with provisions, wheat flour almost always gets the nod of approval. The local provisions are not able to compete in the fresh, unprocessed form since they are quite bulky and not much is eaten at any one time. Moreover, who would think of preparing our traditional dishes of one pot soup or stew peas without including flour dumplings.

Despite the superiority of wheat flour over other staple foods, there is one important nutritional advantage gained by eating ground provisions grown in the Caribbean. The dietary fibre they produce is more than what is available in refined wheat flour and its products. This is so because the dietary fibre in these cereals is reduced during their processing stage. Even when fresh ground provisions are converted into flour, their fibre content is not greatly altered.

Ground provisions grown in the Caribbean can be made into flour and used to make products

which normally rely heavily on wheat flour. Aside from reducing our reliance on wheat flour, by converting provisions into flour, this improves the nutritional contribution of energy and so creates a more favourable basis of comparison between the two forms of flour.

#### HOW TO MAKE FLOUR FROM PROVISIONS

Flour can be made from banana (fig), plantain, breadfruit, cassava, yam and coco (eddoe). The process is as follows:

- Wash and peel the provision in clean water. (Add lime juice to the water to prevent darkening of the provision.)
- Slice very thin. For breadfruit, slice into eights, peel and core.
- Soak in salted water — 2 tablespoons (40g) salt to 2 cups (0.57 litre) water for about a minute.
- Dry sections, one at a time, then cut into thin slices.
- Place the thin slices on a clean tray or wire rack.
- Put the tray in the sun (covered with muslin) or place in oven at 49°C (120°F) and dry slices until crisp.
- Grind or pound the dried provisions in a mortar, sift and repeat the process until all the flour is sifted.
- Store the flour in a clean, dry, air-tight container.



To use in recipes, generally a mixture of one part (e.g. 1 cup) of provision flour is made with 2 parts (i.e. 2 cups) of wheat flour. For banana flour, ½ cup is combined with 2 cups of wheat flour to give tasty products with an attractive colour. When combining these flours with wheat flour to make home-made breads, you will need to add a bit more liquid than normally used for wheat flour alone. This will ensure a moist finished product. Cassava meal/flour is a well accepted alternative to wheat bread made into cassava bread or bammy.

### OTHER CEREALS

Apart from wheat, the main cereals used are rice and corn, cornmeal, grits (hominy). Oatmeal is used to a lesser extent and it is also more expensive. Cornmeal is simply the whole grain of corn which has been ground. It tends to be cheaper than wheat flour. Generally, however, it is combined with flour ½ and ½ for making dumplings, cornbread and other breads. Without wheat flour, cornmeal is eaten as porridge or grits, turned cornmeal/coo coo, pastelles, paimi/conkie. Grits or hominy is a product of corn which is popular in some Caribbean countries. We can also borrow from other cultures which use corn/cornmeal to make tortillas, arepas and cachapas.

### ALTERNATIVES TO BREAD

Even with all these possibilities, bread is not at all easy to replace because of its convenience and familiarity. More recently there are reports of ongoing efforts to produce bread commercially using indigenous flours. These include experiments with various mixtures of flours, including cassava/soya; cassava/peanut, maize (corn)/soya mixtures. These are called composite flours. Work in Guyana has also produced acceptable products using rice/cassava starch and soy protein. The addition of legumes to the mixture compensates for the low level of protein in these flours.

The main advantage of wheat flour in bread-making is the presence of the protein gluten. When mixed with water it produces a rubbery mass which traps the gases given off by fermentation, thus causing the dough to rise. Extensive research has now identified a new class of substance which can replace gluten entirely in binding the dough into an acceptable structure.

The favourable results of these experiments, calls for novel ways of transforming this knowledge into practice whereby the wheat alternative products can be made widely available. Consumer acceptability is also a factor, but if we are to become self-reliant in supplying our food needs in the region, we must be willing to adapt to changes. ♦

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