NEW WAYS WITH OLD GRAINS

Amazing Amaranth



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Navdanya thanks all colleagues and friends who created and adapted the recipes given in this book.

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Preface

India has been a vast repository of agricultural biodiversity. Ancient Indian texts like the *Rig Veda*, the *Upanishads*, *Arthashastra*, list a variety of foods grown and consumed throughout the country.

The concept of balanced diet has been integral to the Indian way of life. Millets and pseudocereals have traditionally provided the staples for most Indians till recently. The green revolution, with its emphasis on wheat and rice production, changed food patterns all over the country, except in the case of small and marginal farmers and peasants, whose food security depended primarily on growing and consuming millets and pseudocereals.

Millet and pseudocereal farming is an indispensable part of mixed cropping. Such farming provides enough energy and balanced nutrition without causing any ecological distress to the earth. It also ensures the optimal utilisation of naturally available water.

Mixed cropping provides more nutrition than monoculture – whether of wheat or rice – as the

same farm, at the same time, produces vegetables, legumes, fruits, berries, fodder, etc. It also eliminates the need for chemical fertilisers and pesticides, and ensures healthier, toxic-free food.

The green revolution strategy was adopted to prevent food shortages and famines. While reducing acute malnutrition, the strategy has led to increased chronic protein energy malnutrition and iron and vitamin A deficiency.

With globalisation, the thrust in agriculture is moving further away from cultivating diverse foods to the cultivation of cash crops like flowers. At the same time, the thrust in food consumption is moving away from the traditional to the new and exotic.

Consumption is essential to the conservation of agricultural diversity. The wealth of Indian food crops could disappear if they do not form part of the daily consumption habits of Indians. And with them will disappear agriculture and agriculturists.

The series 'New Ways with Old Grains' is an attempt to bring back traditional Indian food crops into the daily consumption patterns of the people of India, by devising new ways to use them to meet changing food tastes.

What is Navdanya?

Navdanya is a movement to protect earth's diversity. Working closely with awakened village communities on seed banks and genetic resource conservation, Navdanya aims at integration: from the seed to the table, from the farmers' fields to parliaments, ministries and international forums.

The Navdanya Movement is broadbased and dynamic, where members work together to create a harmonious world. A plentiful and beneficent earth that provides all we need, as we care for it and are sensitive to its needs. An earth equally shared with all species. With a discipline born of understanding, a caring born of insight.

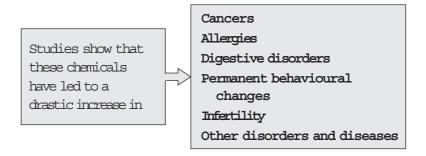
The Navdanya Movement invites involvement as well as continuous and critical self-appraisal.

Navdanya's on-going activities include a conservation farm in Dehradun. Promoting and supporting community conservation initiatives in Tamil Nadu, Karnataka, Orissa, Bengal, Ladakh, Madhya Pradesh Garhwal Himalayas. Workshops and seminars on seeds, patenting and organic farming. Promoting decentralisation and democratisation of rights to natural resources and biodiversity. The production and marketing of organic foods, to help the farmer and give the consumer access to clean and nutritious food.

Navdanya invites you to join this movement. Do call us, meet us, and join us in our endeavour to create the harmony which alone can ensure the survival of our beautiful planet and all that live on it.

Why eat organic foods?

 $P_{
m exple}$ all over the world are becoming increasingly concerned about the use of chemical fertilisers and pesticides in their food.



Organic foods are foods grown without using chemical fertilisers and pesticides. They are also not foods harvested from plants that are genetically engineered to produce toxins to kill pests. No chemicals have been added to preserve them for long shelf life. Therefore they are:

• SAFE • NUTRITIOUS • TASTY

Save money by eating organic. Chemical-free food means lesser diseases, less visits to the doctor and lower medical bills.

Organic foods do cost a little more than chemical-laden food because chemical agriculture is subsidised, organic is not. As more consumers go organic, the price of organic food will come down because government will be forced to change its subsidypolicies. he amazing Amaranth, in its myriad colours, is one of the world's best sources of nutrition. It is one of the oldest grains in the world, and was first cultivated by the people of South America.

The root word 'amara', in both Greek and Sanskrit, means eternal or deathless.

In India, the amaranth is also known as 'ramdana', or god's own grain.

The Amaranth grows all over India, from the high slopes of the Himalayas, through the plains of morth, central and south India, to the coastlines of the east, west and the south. Numerous varieties are found throughout the country. In fact, the Himalayan region is one of the 'centres of diversity' for the amaranth.

The amaranth, though unrelated to any other cereal grain, forms the mainstay of the diets of many people of the world because of its nutritional value.

As the amaranth is a hardy crop, that requires very little water and gives a very high and nutritious yield of both fibre and grain it has traditionally been a important food crop in China and Russia too.

Because it is easy to digest, amaranth is traditionally eaten during fasts, and given to those who are recovering from an illness. It is an excellent substitute for those who are allergic to grains.

The grain is usually popped before being used. The popped grain can be made into gruel called sattu, or into laddoos. It can also be ground into flour. The flour is usually mixed with wheat or rice or millet flour to make chapattis and other everyday preparations.

Cooking increases the nutritive value of amaranth.



The Most Nutritious Grain in the World

The grain of the amaranth has been called the 'most nutritious grain in the world'. It is probably for this reason that even 3000 years ago, the people of South America cultivated several thousand acres of the crop. Amaranth grain was the staple of their diet.

In India, it is consumed both as a vegetable and as a grain all over the country. In the hills people believe that they get their strength from eating amaranth every day. The amaranth is one of the best sources of carbohydrates, protein, minerals, essential micronutrients and fibre.

The FAO (Food and Agriculture Organisation) recommends that equal quantities of amaranth flour and wheat mixed together give adequate nutrition.



India's most critical health problem: Nutritional anaemia

Nutritional anaemia, or insufficient iron in the diet, affects almost half the Indian population, and more than 70% of children and pregnant women.

All body cells live and function in the presence of oxygen. Iron is essential for carrying this oxygen to the various cells. People who lack enough iron, are pale, get tired easily, and become extremely vulnerable to infections and other diseases.

Anaemia during pregnancy leads to premature babies, weak babies, and death of the mother.

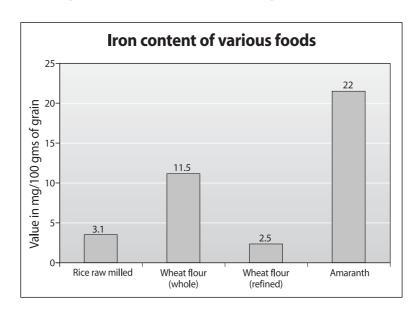
Anaemic children cannot concentrate on either studies or sports as they feel weak, tire easily, and fall ill often.

Nutritional anaemia is best and most cheaply treated by increasing iron in the diet.

THE AMARANTH IS ONE OF THE RICHEST SOURCES OF IRON

The leaves of the amaranth contain more iron than spinach, and have a more delicate taste.

Besides rice bran, the grain of the amaranth has the highest content of iron amongst cereals.



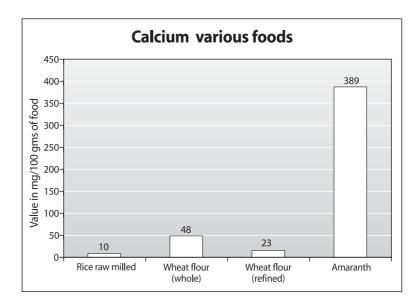
1kg. of amaranth flour added to 1kg. of refined wheat flour, increases its iron content from 25mg to 245mg.

Thus adding amaranth flour to wheat/rice flour is a cheaper and more healthy way to prevent nutritional anaemia, rather than buying expensive tablets, tonics, health drinks, branded flour and breakfast cereals fortified with iron.

Amaranth: the answer to calcium deficiency

Calcium is essential for the proper growth and maintenance of bones, particularly for infants, children and teenagers, and older people (especially warren) for preventing osteoporosis, which makes bones brittle.

The amaranth grain is about the richest source of calcium, other than milk.

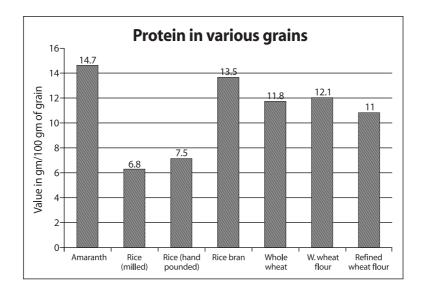


The amaranth is also an excellent source of phosphorus compared to milled rice.

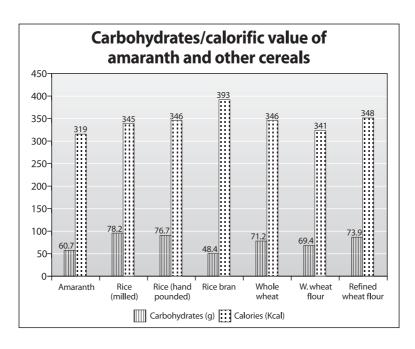
Adding amaranth flour to regular flour increases not just its calcium content, but the whole mineral content of the flour, making it richer in iron, phosphorus and calcium.

Amaranth: the affordable answer to Protein-Energy Malnutrition

The amaranth is extremely rich in complex carbohydrates and in proteins. It has 12-18% more protein than other cereals, particularly lysine - a critical amino acid. It also differs from other cereals in that 65% is found in the germ and 35% in the endosperm, as compared to an average of 15% in the germ and 85% in the endosperm for other cereals.



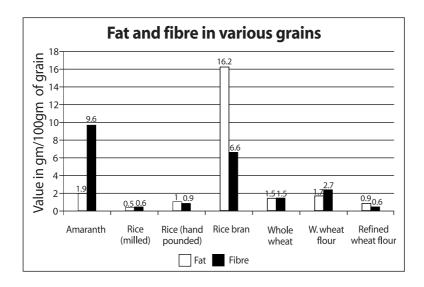
When amaranth flour is mixed 30:70 with either rice flour or wheat flour, the protein quality rises from 72 to 90 and 32 to 52 respectively.



The amaranth starch granules are much finer than those of other cereals, making it extremely suitable for custards, pastes and salad dressings.

Ordinary flour mixed with amaranth flour provides a nutritionally superior source of protein and energy that can satisfy a good portion of the protein requirement of young children, and provide approximately 70% of diet energy.

Amaranth - unparalleled aid to digestion



The oil in the amaranth is unsaturated, and is particularly rich in limbleic acid, which is essential for human nutrition. It also contains tocotrienols - forms of vitamin E, which is good for skin, general health and for lowering cholesterol levels.

Fibre is essential for proper digestion. Both the grain and the leaves of the amaranth have very high fibre content compared to other common cereals and pulses.

The high fibre and nutritional content in the amaranth makes it an ideal food for weight watchers.

Adding amaranth to regular flour makes

- Nutritional sense because it adds essential minerals like iron and calcium, as well as increases the protein and energy value of regular flour.
- Economic sense because all this extra nutrition comes at a price far lower than branded flours which may be fortified with just one of the essential nutrients.
- Health sense because packaged branded flours need to have chemicals added to prevent pest infestations during the long shelf-life.
- Equity sense, because adding amaranth to regular flour can be done very cheaply at chakkis, ensuring that the livelihood of the chakki workers as well as the chain of small traders and middlemen stays intact.

Get innovative and adventurous Think of new ways to use one of the oldest grains in the world



You can substitute wheat flour with amaranth flour in the same measure as called for in the original recipe. Just add a teaspoon of baking soda, and increase the cooking time a little.

Here are a few recipes to set you off....

Amaranth Fruitcake

1/2 cup dates, chapped

1/4 cup fiqs

1/2 cup Navdanya amaranth flour

1 ap boiling water

2 egg whites

1/4 cup butter. (margarine can be used instead)

1/4 cup chapped pineapple

2 cups Navdanya whole wheat flour

2 teaspoons baking powder

1/2 cup walnuts, chopped

1/2 cup almonds, chopped

1 teaspoon vanilla extract

Soak dates, figs and amaranth in boiling water. Beat eggs well, add honey and butter. Beat well. Stir in all remaining ingredients and mix well. pour into an oiled loaf pan. Bake at 175-180° C for 1 hour and 15 minutes.

Amaranth apple bake

8 apples (out up), unpeeled

1 tbsp Navdanya organic honey

1 tsp cinnamon

1/4 cup Navdanya amaranth flour

1/4 cup water

1/2 aup arrowroot flaur

Cook apples in water till soft. Drain, peel and mash, and add honey, cinnamon, flour and arrowroot flour. Lightly grease a baking dish, and put the mix into it. Sprinkle popped amaranth on top. Bake 20 minutes at 175-180° C.

Toasted Amaranth Rolls

- 1 1/2 cup lukewarm water
- 1 1/2 tbsp vegetable oil
- 3 tbsp Navdanya honey
- 1 1/2 tsp salt (optional)
- 1 1/2 tbsp active dry yeast
- 1 cup Navdanya amaranth flour
- 2 1/4 cups Navdanya whole wheat flour

Note: You can add raisins, cinnamon, chopped nuts, dried orange/lime/mosambi peel, popped amaranth seeds, and replace oil with butter softened to room temperature. Mix first five ingredients together, then stir in flours. Roll dough on a lightly floured surface (about 1/4" thick). Spread with butter and sprinkle with remaining ingredients, except amaranth seeds. Roll up dough and slice 2 inches thick. Place on sides, close together in an oiled pan. Sprinkle with toasted amaranth seeds, and bake at at 175-180° C for 30 to 40 minutes.

Sesame-Amaranth Cake

- 3/4 cup Navdanya amaranth flour
- 3/4 cup Navdanya whole wheat flour
- 1 1/2 tsp baking powder
- 1/4 cup ground sesame seeds (use blender or grinder to grind fine)
- 1/4 cup whole sesame seeds
- 1/4 tsp salt (optional)
- 1 egg; besten (optional)
- 1/2 cup unrefined sesame oil (this smells strong, can be replaced by those not used to it by other refined oil)

1/2 cup sesame coarsely ground.

3 tbsp Navdanya honey

1/4 cup milk or water

1 tsp lime juice

1 tsp vanilla

Mix dry ingredients and liquid ingredients in separate bowls, then mix together, and beat well. Press mixture into an oiled and floured 9" x 13" cake pan. Bake at 175-180° C for 12-15 minutes or until golden brown. Cool slightly before outting into small wedges.

Amaranth Crepes (pancakes) In Lemon Sauce

CREPES

- 3 eggs
- 1 tsp Navdanya honey
- 1 tsp vanilla
- 2 the melted butter or vegetable oil
- 3/4 cup milk or water (milk tastes better)
- 1/3 cup Navdanya amaranth flour
- 1/8 tsp salt (optional)

Beat eggs well; add other liquids, then flour and salt. Heat lightly oil pan, or non-stick frying pan. Rut 1-1/2 tablespoons butter in pan and tip to spread over surface. Add 1/2 cup batter. Bake. Turn crepe and bake other side.

Fill cooked crepe with bananas mashed (with or without cream) or whipped paneer (with or without sugar powder and a little cream); roll up and remove to plate. Arrange rolls side by side in plate, cover with saure.

CREPE SAUCE

- 1 cup water
- 1/4 cup Navdanya honey
- 1/4 cup lemon juice (if using lime juice, mix with water in ratio 2:1)
- 1 the Navdanya amaranth flour, or arrowroot powder or comflour/amaranth flour
- 1 tsp finely grated peel of lime or lemon

Combine ingredients (except peel) in a saucepan; stir and simmer over medium heat until clear and slightly thick; remove from heat and stir in peel.

Banana Bread with Amaranth

- 1/4 aup nuts to be finely ground
- 1 3/4 cup sifted Navdanya amaranth flour
- 1/2 cup arrowroot powder
- 2 tsp baking soda
- 1/2 cup nuts; chapped
- 1 1/2 cup banana; mashed
- 1/4 cup veoetable oil
- 1/4 cup Navdanya honey
- 2 eggs
- 1 1/2 tbsp lime juice
- 1 tsp vanilla

Grind the whole nuts very fine. Mix with the flour, arrowroot and baking soda in a large bowl. Stir in the chopped nuts. In a separate bowl, mix together the bananas, oil, honey, eggs, lime juice and vanilla. Then pour the liquid mixture into the flour bowl and mix with a few swift strokes. Do not overmix. Pour into

a greased 9x5" loaf pan or 2 7x3" pans. Bake large loaf at 175-180° C for 55 to 60 min, or small loaves for 45 min or until a cake tester inserted in the middle comes out clean. Let stand in the pan for 10 min, then turn the loaf out onto a wire rack to cool.

Amaranth Crunch Bar

- 2 tbsp Navdanya honey
- 1 tbsp melted Navdanya jappery
- 1 thep butter
- 1 1/4 cups puffed Navdanya amaranth

In saucepan combine honey, molasses and margarine. Cook over medium heat for 4-7 minutes, stirring constantly, until mixture turns golden brown. Add amaranth and stir with a wooden spoon until all the amaranth is coated with the syrup. Lightly grease a plate, pour mixture, and press firmly. Cut into squares or bars when hot, and allow to cool.

Spicy Ginger Snaps

- 1/4 cup Navdanya honey
- 3 the oil
- 3 tbsp water or unsweetened orange juice
- 1 cup Navdanya amaranth flour
- 1/3 cup arrowroot
- 1 tsp Eno's fruit salt
- 1/2 tsp powdered ginger
- 1/2 tsp ground cinnamon
- 1/2 tsp baking soda
- 1/8 tsp ground cloves

Heat honey, oil and water or juice till the honey melts. Remove from heat, and set aside. Sift together flour, arrowroot, Eho's fruit salt, ginger, cinnamon, baking soda and cloves. Stir into liquid mixture. Lightly grease a baking sheet. Drop rounded teaspoonsful of batter, keeping enough distance between them to allow them to puff a little. Bake at 150° C for 15 to 18 minutes, until cookies are lightly brown. Cool on wire racks. Use within a few days.

High Protein Breakfast Cereal

2-1/2 cups rolled oats

3/4 cup Navdanya amaranth flour

1/2 cup chapped walnuts

1/2 cup grated unsweetened coconut

1/3 cup melan seeds

1/3 cup peanuts

1 tsp ground cinnamon

1/2 apoil

1/2 cup Navdanya honey

1 tsp vanilla (optional)

3/4 cup raisins or other dried fruit (optional)

In a large bowl, corbine the cats, flour, walnuts, coconut, melon seeds, peanuts and cinnamon. Heat oil and honey till the honey melts. Stir in the vanilla. Pour over the cat mixture. Make sure the dry ingredients are well coated. Mix well. Spread mixture in a thin layer on a cooking sheet or a tray used to make cake rolls. Bake at 150° C for 20 to 30 minutes, stirring mixture every 10 minutes, till it is golden brown. Allow

to cool, stir in raisins or other dried fruit, then store in the refrigerator in tightly capped jars.

Note: 1/2 cup mashed bananas or your favourite pureed fruit can be added to the honey and oil mixture while it is heating.

This delicious mix makes a quick, high-energy, high-protein, high calcium and high iron breakfast, especially suitable for school and college goers and for working people. It is also much cheaper than buying fortified breakfast cereals.

Atole (amaranth drink)

1/2 cup comflour 1/2 cup Navdanya amaranth flour 4 or more cups hot water, Navdanya honey to taste.

Flavor with any of the following:

Anise (saunf)

Pineapole

Cinnamon

Chocolate (this blend is called Champurrado)

Nuts

Mix the amaranth and corn flour with the water until smooth. Pour into a medium-size saucepan and simmer whilst stirring. Gradually, add honey, then the flavoring stirring all the while. When everything is dissolved serve in cups or mugs. Strain, if needed, to remove lumps. Add water for desired consistency.

Rice and wheat shortbread with amaranth

- 1/8 cup Navdanya amaranth popped seed
- 3/4 cup Navdanya whole wheat flour
- 1/4 cup Navdanya honey
- 3/4 ap rice flar
- 1/4 cup butter (softened to room temperature)

Mix all ingredients well to make a smooth dough. Roll out 1/4 to 1/2 inch thick into an approximate 8" circle. Cut the dough once from the outer egde to the centre with a sharp, greased knife. Bake on an ungreased tray for 17 minutes at 175-180° C. Cool, out into wedges.

Amaranth Baking Powder Bread

- 1 cup Navdanya amaranth flour
- 1 1/2 cup Navdanya whole wheat flour or rice flour
- 1 tbsp baking powder
- 1 tsp salt (optional)
- 1 cup milk or water
- 3 tbsp Navdanya honey
- 2 tbsp vegetable oil
- 2 egg whites beeten (if using rice flour)

Sift dry ingredients together in a bowl. Mix the liquid ingredients, and then stir into dry ingredients. Whip egg whites till they stand in peaks, and fold into mxiture. Pour batter into well-oiled 8" x 4" pan and bake at 175-180° C for about 45 minutes. Cool 10 minutes in the oven before removing bread from pan.

Peanut Butter Amaranth Logs

- 3/4 cup Navdanya popped amaranth seed
- 3/4 cup grated coconut
- 1 cup peanut butter
- 1/2 cup coarsely ground sesame seeds
- 1/3 cup Navdanya honey
- 1/2 cup rolled cats or nuts
- 1/3 cup melan seeds
- 1/3 cup skimmed milk powder

Mix together amaranth seeds and coconut and spread on baking tray.. Heat at 115-125° C in the oven for 15 minutes.

Meanwhile, mix the remaining ingredients together in a blow

Divide amaranth and coconut mixture in half. Mix one half with other ingredients. Roll into a cylindrical shape, 1/2 in. wide. Out into 3" long pieces. Roll each piece in the remaining amaranth seed and coconut mix to coat it well. Place in the refrigerator or freezer until ready to serve.

Golden Amaranth Pineapple Cheesecake

- 3/4 cup Navdanya amaranth flour
- 3/4 cup maida
- 1 1/2 tsp baking powder
- 4 tbsp Navdanya honey
- 1 cup milk or water
- 1 tsp vanilla
- 1/2 cup chapped walnuts
- 1/2 cup chapped almonds

Sift together the flours and baking powder into a bowl. Mix honey, and vanilla together, and add to the flours. Add walnuts and almonds and stir well. Pour into a lightly greased and floured baking pan and bake at 215-220° C for 15 minutes or until lightly browned. Cool. Cut into wedges and split in half.

Cheese and Pineapple Topping

- 1 pineapple, peeled, cut into bits and crushed (if using tinned pineapple, drain, wash and redrain thoroughly before crushing; do not add any honey)
- 1 cup paneer
- 1 tsp vanilla
- 1 tbsp Navdanya honey

Milk to soften the mix if needed

Blend paneer, honey and vanilla in the mixie to a thick pouring consistency, adding milk if needed. Spoon pineapple onto cake wedges and pour cheese mixture over them.

Mashed Potato Doughnuts

- 3/4 kg potatoes, cooked and mashed
- 1 the butter or oil
- 1/2 cup grated cheese
- 1/2 tsp salt
- 1/8 tsp freshly ground black pepper
- 3/4 cup Navdanya popped amaranth seed
- 1/2 cup maida

Cook potatoes 20-25 minutes, until soft. Drain well.

Add butter, cheese, salt, and pepper to mashed potatoes. Refrigerate until cold. Preheat oven to

200° C. Remove potatoes from the refrigerator, and mix with maida. Divide into six equal portions. Roll each portion into a 7 inch long rope. Roll each rope in toasted amaranth, then join ends to form the doughnuts. Place on a lightly greased baking tray, and bake 12 minutes.

Besan and Amaranth Dhokla

- 1 cup Navdanya besan
- 1 cup Navdanya amranth flour
- 1 theo Eno's fruit salt
- 1 tsp baking powder
- 1 tsp salt
- 1 tsp supar
- 1 aup yoghurt (buttermilk is better)
- 1 thep ginger/garlic/green chillie paste (you can add more if you prefer a stronger taste)

Red chilli powder for sprinkling

Sift together the flours, salt, baking powder and Eno's fruit salt. Add sugar. Beat yoghurt, add to the flours and mix. If needed, add water till you get a pouring consistency. Add ginger garlic paste and beat well.

Lightly oil flat pans or small katoris. Fill half of each with the batter. Sprinkle with chilli powder, and steam till done.

Serve hot with green chutney/coconut chutney/garlic chutney.

Amaranth-Buttermilk Idlis

- 1 cup white urad dal (cleaned and soaked for 2-3 hrs)
- 1 cup Navdanya amaranth (whole)

Salt to taste
1 cup buttermilk (more if needed)
1 tbsp baking soda
1" piece ginger
Finely chapped green chillies to taste
1 tsp Navdanya cummin (whole)
1 sprig curry leaves (chapped)
Coarsely ground Navdanya black pepper

Wash and grind dal to a very fine and light paste in a mixie. Add amaranth, salt and buttermilk, and mix well till the batter is of a thick pouring consistency. Add finely chapped ginger, green chillies, curry leaves, whole currin, and baking powder and let stand for 5 minutes.

In the mentime, lightly oil katoris. Fill half of each katori with the batter, sprinkle coarsely ground pepper, and stem till done.

Serve hot with coconut chutney, sambhar or chutney powder.