

TRIAL OF THE QUINOA  
PLANT  
IN  
THE ERITREAN FIELD

DECEMBER 1986



AN ENQUIRY CONDUCTED TO OBTAIN SEEDS FROM THE MINISTRY OF AGRICULTURE IN BOLIVIA

***An enquiry conducted***  
***To***  
***obtain seeds of this vitamin rich grain***  
***from***  
***the Ministry of Agriculture***  
***in***  
***Bolivia***

By Emnetu Tesfay

Stavanger, Norway  
December 1986

11-11-86

Humberto Gandarillas  
Casilla 0199 La Paz  
Bolivia

Dear Humberto Gandarillas:

In november 1985 a long article featuring the plant QUINOA and your research was printed in a local newspaper here in Norway. We are writing this letter after your address was given to us by the author of the article Mrs. Diis Bohn, a journalist from the Norwegian News Agency, whom we contacted for more information about the plant. We are a conservationist group located in Stavanger, Norway who want to experiment this nutritious species in Eritrea (north-east Africa) which lies within the tropics on a latitude of 10-20 degrees north from the equator.

Ever since we read the article our group has developed strong interest in experimenting QUINOA in Eritrea. According to the information given in the article, the plant has a fair chance of adapting to the soil and climatic condition in Eritrea. For this reason we would like to request your assistance in providing our group the seeds necessary for the experiment. I.E about 650 gram of the major species grown in Bolivia. Please attach inspection certificate to the consignment. In addition dispatch of literature about studies made on this particular plant will be very much appreciated.

We would like to use this opportunity to assure you that results of our experiment will be reported back to you. We look forward to hear from you. Thanks in advance.

Best regards,

(for the group) Emmetu Tesfay  
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Translation from Norwegian

"Rogalands Avis" (Stavanger newspaper), Wednesday 13 November 1985

QUINOA, SOUTH-AFRICA'S UNKNOWN FOOD TREASURE:

A SOLUTION TO THE WORLD'S FOOD PROBLEM ?

By Diis Bøhn (text) and Inge Gjellesvik (photo), the Norwegian News Agency, NTB.

High up on the plains by the Andes Mountains, in the homeland of the potato, grows a plant which may become the solution to the world's food problem: the quinoa. This small fruit is rich in starch and its taste resembles that of wild rice. It has been known in South America for centuries. But elsewhere this hardy, protein-rich plant has never had a proper break-through as part of people's diet.

A little strange, perhaps, because in the opinion of the scientists, Quinoa has it all.

Agronomist Humberto Gandarillas, in La Paz, the capital of Bolivia, has conducted research on this plant for more than 20 years. He probably knows more than any one else about the quinoa. The last few years he has been working for the United Nation's food organisation, FAO.

- Quinoa can be grown in areas with very poor soil. The hardy plant can survive periods of extreme drought. It has an enormous capacity for adaptation, and will be possible to grow in very many different places, said Gandarillas when he was interviewed by the Norwegian News Agency.

RICH IN PROTEIN

Quinoa was the first plant to be cultivated by the South Americans. In Latin it is called Chenopodium Quinoa, and it belongs to the orach family. Its Norwegian cousin is called Garden Orach ("meldestokk") and is considered a weed.

It is primarily the fruits, which look like seed and are rich in starch, which are used. The plant is extremely nutritious. Some species of quinoa contain 18 per cent protein, while the most common species contains 14 per cent. By comparison, standard tables show that wheat contain 11 per cent protein and corn 3.5 per cent.

CAN REPLACE MILK

- Quinoa also contains all the amino acids, or fatty acids, which animals and human beings need to grow. This is not true of grain and corn. Which is why this plant actually can replace milk, said Gandarillas.

- No more than 200 mm precipitation is required in the areas where the quinoa grows, the agronomist told us. He feels there is no reason why quinoa should not be possible to grow in dry areas in Africa, thereby solving some of the problems of food supplies on this continent. In addition, the plant is highly tolerant of soil containing salt.

The drought in Bolivia a few years ago is the proof of Gandarillas words. All crops were destroyed by the lack of water, both potatoes and corn. Only the quinoa survived.

#### MOSTLY IN BOLIVIA

Quinoa originally grew in the lower valleys surrounding the Andes range but has continued to move up into the higher regions. - We do not know the accurate area of origin, but the quinoa comes from Equador, Peru or Bolivia. It is now also cultivated in Colombia, but its use is still most widespread in Bolivia, said Gandarillas.

There are 21 different species of quinoa, and the variations in shape and colour are great, it can be red, green or brown. The white seeds are most widely used.

#### AND THIS IS HOW IT IS USED

Most people use quinoa in soups and stews. One type can be prepared in just the same way as rice. A Bolivian food expert has written the book "Quinoa in 1000 ways". The flour can be used in tortillas - pancakes, bread or biscuits. The Quinoa does not contain the bi-product gluten which is formed by wheat starch and which is found in all other types of grain. Quinoa would therefore be invaluable to patients who suffer from the disease "cøliaki", as such patients depend on a gluten-free diet. The leaves can be used in the same manner as spinach.

#### THREAT TO WHEAT

The Spanish Conquistadors who came to South America in the 14th and 15th Centuries had little respect for the quinoa. Unlike the potato, the plant did not become an international best seller from the Andes. The Europeans cultivated a number of different types of grain and thus had no direct need of the quinoa.

- Here on the South American plains, the quinoa spread more and more. Today, it is the most important plant to small farmers in the Andes region, said Gandarillas.

He has produced a type of quinoa which does not have the bitter membrane just inside the skin which the other types have. This is the type which Gandarillas feels may become important on other continents.

#### QUINOA BREAD

Food experts in Latin America are now attempting to make people change their eating habits by using more of the protein-rich quinoa plant. Wheat is being imported at high cost, while South America's own "super grain" is not considered good enough. Peru's newly elected President, Alan Garcia, has started a campaign to convince people to use quinoa bread instead of the European white wheat bread.

- But why hasn't the world yet discovered this virtual gold-mine of a foodstuff?

- It is just starting. We are continuously getting questions from abroad to send seed. In West-Germany, France, and Argentina experiments have been started. In the USA, quinoa is being grown in eight states, and in Japan and China scientists are also conducting cultivation experiments.

In Norway, no attempt has been made to grown quinoa, says the Norwegian College of Agriculture to the Norwegian News Agency.

- But there is no reason why the quinoa should not be able to survive in Norway. The important thing is to try out the type which has adapted to the climates in Chile and Argentina. The climates there resemble the Nordic climate, said Gandarillas.

Translated from Norwegian by:



*Mari Baalsrud*  
21.09.86