

Fonio and the Reawakened 25

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DIGITARIA EXILIS (WHITE FONIO) AND DIGITARIA IBORUA (BLACK FONIO) are members of the same family of millets with a great potential to improve nutrition, foster rural development and support sustainable land use. These grains are the smallest among all millet species. Fonio has been cultivated in West Africa for more than 5000 years. It remains an important staple in the region because of its high nutritional value, short growing cycle, and reliable harvest even in the face of drought. Fonio grains can be boiled, baked or brewed into beer. Its adaptability to erratic climatic conditions, combined with the international market's craving for more healthy grain substitutes has brought fonio to the limelight. Thanks to the work done by chefs and entrepreneurs in the creation of value added products and recipes for the urban market, fonio is gaining increased popularity.



FONIO

Digitaria Exilis & Digitaria Iborua

Origin: West Africa
 Crop Wild Relative: *Digitaria longiflora*
 Grown widely across Western Sahara and Sahel regions of Africa and minimally in the Dominican Republic
 Close to a complete protein with high amounts of iron, calcium, zinc and magnesium

Digitaria exilis (White Fonio) and *Digitaria iborua* (Black Fonio) are members of the same family of millets with a great potential to improve nutrition, foster rural development and support sustainable land use. These grains are the smallest among all millet species. Fonio has been cultivated in West Africa for more than 5000 years. It remains an important staple in the region because of its high nutritional value, short growing cycle, and reliable harvest even in the face of drought. Fonio grains can be boiled, baked or brewed into beer. Its adaptability to erratic climatic conditions, combined with the international market's craving for more healthy grain substitutes has brought fonio to the limelight. Thanks to the work done by chefs and entrepreneurs in the creation of value added products and recipes for the urban market, fonio is gaining increased popularity.

BOTANY

The name Fonio is used for two grass crops in the genus *Digitaria*, part of the millet family. These two species were domesticated from wild *Digitaria* grasses growing in the savannas of West Africa. White fonio is an herbaceous annual that grows to 30- 80 cm tall in an erect fashion. The caryopsis (a type of dried fruit, i.e. a grain) is very small and matures quickly, coming in a variety of colors from white to yellow to purple. Black fonio is similar to white fonio, standing taller yet producing a smaller grain. Fonio's extensive root system can reach over 1 meter down into the soil, allowing it to reach deep-buried nutrients and water reserves.

CULINARY USE

Fonio is the staple crop for millions of people in West Africa, in countries such as Senegal, Mali, Nigeria, Burkina Faso, Togo and Guinea. The consumption of Fonio has an ancient history in the region, dating back 7,000 years. Fonio, as a small grain, cooks quickly in about 7 minutes of boiling in water. Fonio is boiled or steamed to make a fluffy couscous of sorts or a thick porridge. The grain is ground to use as a flour for baking, especially for flatbreads, and fermented into a beer.

NUTRITION AND MEDICINAL USE

Fonio beats most other grains with its packed nutritional profile. Fonio has a higher carbohydrate content than maize, sorghum and other millets and contains more protein than rice. Deficient in rice, maize, wheat and other grains, the amino acids methionine and cysteine present in fonio are necessary in human diets and bring fonio close to a complete protein. Fonio has high amounts, more per-serving than any other grain, of nutrients such as iron, calcium, zinc, magnesium and manganese.

AGRICULTURE

White fonio (*Digitaria exilis*) is the most commonly cultivated fonio, grown in dry savannah areas of the Sahel region. Black fonio (*Digitaria iborua*) is less common but more nutritious and grown in Nigeria, Niger, Benin and Togo. Around 700,000 tons of fonio is cultivated in West Africa every year. Fonio is sown when the first rainfalls in a region begin. The ground is prepared by ploughing with animals or by hand with tools such as a daba, then fonio seeds are broadcast seeded, sometimes with sand mixed with the tiny grains to create an even planting pattern. Fonio grows quickly; some varieties can be harvested 5 weeks after sowing. This allows the grain to support the nutritional needs of families in the 'hungry season,' before other staple cereal crops have matured. Fonio harvest and processing are intensive and time consuming tasks, still done mostly by hand. After the plants are cut with a sickle and collected into a sheaf, the sheaves dry in the sun. The sheaves are then threshed by hand and the husks of the grains are removed (decortication). Further abrasion is applied to remove the bran and germ, at which point the fonio is called "whitened" and ready for consumption. Fonio is prized for its ability to grow in marginal and depleted soil conditions, adapted to the desertified and sandy soils of the Sahel region. Fonio is incredibly resilient, able to withstand dry and tropical conditions, a large range of temperatures and altitudes, and poor sandy, rocky or acidic soils.

HISTORY

Fonio has been cultivated in West Africa for over 7,000 years, likely placing it as the oldest crop in the region. White fonio (*Digitaria exilis*) was domesticated from the wild grass *Digitaria longiflora*. Fonio is a prized and often sacred crop, used in feasts and special events such as weddings. The Dogon of Mali call fonio the "seed of the universe," believing the world was created from a grain of fonio. French colonizers fought the popularity of fonio, labeling it peasants food and enforcing the cultivation of monocultures for export and the import of foreign cereals. Despite this sad history of food system destruction, fonio has remained a staple or main crop for 3-4 million people. Fonio is now gaining worldwide attention as an important food source in face of increasing climatic change and nutritional needs.

RESEARCH

Fonio lacks extensive study compared to the majority of cereal crops; even with its great potential as a crop for the needs of the future, producers worldwide have yet to gain interest in fonio cultivation. Fonio holds potential for argoecological development for use in intercropping systems. More agronomic and technology development is needed, as fonio production is still time-consuming and labor-intensive, due to the lack of proper harvesting, threshing and processing machines for small to medium scale producers.

CUISINE

- [Fonio Recipes- African Epicure](#)
- [Basic Fonio Recipe- James Beard Foundation](#)
- [How to Make Fonio Video- Yolélé Foods](#)

SOURCING

- [Farafena- Fonio](#)
- [Yolélé Foods- Fonio](#)

COMMUNITY RESOURCES

- [Fonio \(*Digitaria exilis*\)- CIRAD](#)
- [Early White Fonio- Slow Food Foundation](#)
- [Fonio- AgriGuide](#)
- [Lost Crops of Africa: Volume I: Grains: Chapter 3: Fonio](#)
- [Fonio- World Crops Database](#)

SOURCES

- Illustration- [Digitaria exilis \(PROTA\)](#)
- [Fonio- African Epicure](#)
- [Fonio — a new “superfood” from Africa \(but remember whose crop it is\)](#)
- [Factors Predicting Consumption of Fonio Grain \(*Digitaria exilis*\) among Urban Malian Women of Reproductive Age](#)
- [3 Fonio \(Acha\) | Lost Crops of Africa: Volume I: Grains](#)

