Rice Fermentation in Ecuador

Fermented rice, or "Sierra rice", of Ecuador, is distributed and consumed exclusively in the Andean Sierra. Fermenting precooks the rice, thus reducing the cooking time in the Andean Highlands. "Sierra rice" is the only type used in preparation of "dry rice", which is considered indispensable to all meals.

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Agricultural produce has been subjected to fermentation processes by primitives, such as the Philippine Igorots and the Fon, Goun, and Yoruba tribes of Africa (1), as well as by modern societies of industrialized economies. Rice, in particular, has been fermented in many parts of the world—notably in India, China, Indonesia, and Japan (11)—into alcoholic beverages in the form of whiskey (3), wine (6), and beer (2). In Ecuador, however, rice is fermented, not into a beverage, but rather as a main item in the diet of the Andean populace.

Ecuador's first population census, completed in November 1950, recorded 3,202,757 inhabitants. Of these, 40.5 percent lived in the coastal plains sloping westward toward the Pacific from the Western Cordillera; 58.06 percent was distributed within the Sierra, which embraces the Western and Eastern Cordillera and the inter-Andean valley between those mountain ranges; 1.4 percent dwelt in the Orient stretching eastward from the Eastern Cordillera to the Amazon; and 0.04 percent inhabited the Galapagos Islands (9, Table 1).

These physiographic divisions are shown on the accompanying map.

Although the 1950 census did not include an ethnic classification, some concept of racial distribution may be gleaned from a government publication issued in 1944 which estimated that two years earlier ten percent were Whites, 39 percent Indios, 41 percent Mestizos, 5 percent Negroes and Mulattos, and the remaining 5 percent "other" races (7, p. 11). However, unofficial estimates have held the Indio population to be predominant.

Of the total population, 38.6 percent was considered economically active (9, Table 13). The importance of agriculture to Ecuador's economy is revealed by the fact that in 1946 it was estimated that 63 percent of the economically active people were engaged in agriculture, hunting, and forest exploitation, which, together with mining (employing one percent of the economically active), accounted for 48.7 percent of the total national income (7, p. 9).

In 1945, agricultural products comprised 65.6 percent of total export values; by 1952, they had climbed steadily to 91.2 percent (7, p. 140). Commodities shipped abroad included balsa wood, bananas, cocoa, coffee, rice, rubber, and tagua nuts, and in addition kapok, dye-woods, livestock, and straw hats.

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The significance of rice to Ecuador as an item of international trade may be discerned from the fact that among the five foremost exportable commodities, rice accounted for 38.1, 45.7, and 14.0 percent of their value in 1940-44, 1944-48, and 1948-52 respectively (7, p. 141).

Domestic consumption has remained fairly stable over the past ten years at between 800,000 to 850,000 bags (of 100 pounds of milled rice each) per year. Acreage and yields, however, have fluctuated quite sharply with climatic conditions and changes in international trade. Most of the local market caters to the coastal inhabitants for whom rice, in a hard-milled, white state, forms the mainstay of their diet. A considerable segment of the trade, however, is destined to the production of an intentionally fermented rice. This product is distributed and consumed exclusively in the Andean Sierra, and is known as “Sierra rice”, while the regularly-milled rice is called “White rice”.

“Sierra rice” is used exclusively in the preparation of “dry rice”, which is considered indispensable to all meals. “Dry rice” is prepared by cooking the kernels until they separate evenly. Inasmuch as fermentation already precooks the rice by subjecting it to temperatures of 50 to 80 degrees C., “Sierra rice” requires less cooking time in the Andean altitudes where water boils below 100 degrees C. “Dry rice” is distinguished from white “soup rice” and “wet rice” in that the latter are cooked to a mushier consistency than the former.

Fermentation is induced by dumping