

Workshop on irrigation in rice

Until the 1990s, Cuba produced half of its annual requirement for milled rice, in that time, approximately 500,000 tons, by means of a high-input, industrialized system of agriculture. The rice was sown by airplane, or, planted by direct seeding, in three main regions of the country. Production was done by seven state companies operating between 10,000 and 35,000 hectares. This system producing one crop per year alternated with the grazing of livestock. The paddy yield was approximately 3.4 tons per hectare.

At the beginning of the 1990s, the collapse of relations within socialist camp affected Cuba's supply of fuel and fertilizers, resulting in a dramatic decrease of state-produced, high-input rice. Soon, a spontaneous and popular movement to produce rice in pastures and along the banks of roads sprang up. It was called Arroz Popular (Popular Rice) and was given some recognition by the government. By 2003, its production had reached 272,000 tons, while the high-input industrialized rice output was just 54,000 tons, and rice imports were very large.

Recently, the Institute for Research on Irrigation and Drainage conducted a workshop to discuss the current state of hydraulic infrastructure for rice production in the country, as well as to examine new techniques of rice production where flooding is not used to control weeds, but where irrigation is by sprinkler (aspersión) and weeds are controlled with herbicides. The four topics discussed were:

1) The current situation of the water reservoirs destined for rice production - Ing. Eduardo Rey, National Institute for Hydraulic Resources

The island has a total of 239 reservoirs, of which some 30 are considered "rice reservoirs" in that their main objective is to supply water to flood rice fields. The problems associated with these 30 rice reservoirs were discussed. Their efficiency of use is around 50 percent.

2) The main scientific results in the irrigation of rice in Cuba – Ing. Aymara Garcia IIRD

A study was presented of water management in different phases of the growth and development of rice. One of the alternative proposals was the suspension of irrigation during the vegetative phase of growth, with the objective for reducing water consumption during irrigation and increasing the number of fertile tillers and yield of rice grains. An action plan was elaborated for studying the implementation of new technologies of agronomic management of crops and to quantify the volumes of water that are applied during irrigation.

3) A new design for rice irrigation and drainage systems in Cuba - Ing Julio King, IIRD

Information was presented related to a trial in the province of Granma in 2000. The main factors studied were: the use of laser to level the terraces, the size of the terraces and the infiltration rate. The experimental yield was 8.3 t/ha, more than double the average commercial yield.

4) SICA can save a lot of water - Dra. Rena Pérez, Volunteer SRI Coordinator for Cuba

After giving a brief explanation of SRI (System of Rice Intensification), a world panorama of the results of this new transplant methodology was presented, pointing to yield increments of 52% across a variety of countries, with a 44% saving of water and an increase in net revenue of 128%. Reference was made, and pictures were shown, of the application in Brazil of sprinkler irrigation, using the central pivot system, where besides increasing the yield from

3.5 to 8.0 t/ha, the production cost/ha was reduced by 20 percent. Finally, pictures were shown of an observation SRI (SICA) trial using sprinkler irrigation in a small experimental field in Cuba (Fig. 1), managed by a team comprised of members of both the Institute of Research on Irrigation and Drainage and the Institute of Research on Rice, Ministry of the Agriculture, Cuba.

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Figure 1 Irrigation by sprinkler (aspersion) for SICA crop in San Antonio de los Baños, CUBA