

Progress in Cuba with the Sustainable Sugarcane Initiative

That the Sustainable Sugarcane Initiative in Cuba is really a mistake. It was the summer of 2011 when I received an email message from a friend, Dr. Norman Uphoff, with an accompanying file labeled 'SSI'. I thought it a mistake and that he had meant to write 'SRI (System of Rice Intensification)', not "SSI". The email explained how a friend in India, Dr. Biksham Gujja, was working with 'the sustainable sugarcane initiative' (SSI), an extension so to speak, of the new SRI system used in rice production. An on-farm trial in India using 35-day old transplants from individual setts (buds), rather than cane stalks lain horizontally in a furrow, had increased the farmer's yield from 35 to 110 t/ha. The accompanying file was a training manual on this new system, the Sustainable Sugarcane Initiative (SSI).

Having worked as an animal nutritionist in 156 sugar mills in the cane sector for 17 of the 56 years that I have lived in Cuba, I couldn't believe my eyes and immediately forwarded the manual to friends in a sugar cane coop in Pinar del Rio where I had been promoting SRI. They couldn't read English but did understand pictures and immediately prepared a provisional outdoor nursery with enough bags of single-bud setts that when ready and transplanted, gave them a trial plot of 0.9 ha of SSI sugarcane. During 14 months, the author visited the coop seven times to take pictures and follow the progress of the cane planted according to this new system.

Two months prior to reaching maturity, in November, 2012, an arson set fire to the plot and the following day it was necessarily cut yielding an estimated 150 tons of clean cane. The average weight of the clean tillers was 4.2 kg and each hill yielded between 18 and 20 tillers, something the farmers had never seen. One month later, during a year's end technical meeting of the island's principal cane agronomists, the author presented a Power Point (PP) report of the preliminary results and gave each province a CD with the PP.

Two YEARS passed and one day an article appeared in our daily, national, Havana newspaper referring to some unusual sugarcane yield, 108 instead of 35 t/ha, in a cane coop on the other end of the island. The article mentioned something about them having seen a report from a cane coop in Pinar del Rio. The author located the writer of the newspaper article, and he in turn put her in touch by phone with the president of the cane coop in Las Tunas who had seen her PP presentation, taken there on someone's flash stick.

In March, 2015, a small interested team from Havana drove to the coop in Las Tunas. The president, Ing. Jose Luis Jomarón, discussed the coop's amazing work of almost two years to adapt SSI to his extremely arid, almost inhospitable conditions. The coop had a total of 1098 ha and would never have sufficient plastic bags to replicate what they first saw on the flash stick of the SSI trial in Pinar del Rio. Also, when the older members saw the PP, they remembered when the "colonos", the former private cane producers, planted cane using two and three-budded setts sown in parallel.

The president told this author that mainly due to the results seen in the PP, he decided to design a commercial trial of 15 ha using 3-bud setts to begin with the rainy spring planting season of 2013. Rather than plant the setts in parallel, he used a wide row (1.0 m) and planted the setts in diagonal fashion which let in more light/air giving a double-row aspect to the field. The initial results were extremely encouraging, particularly the fact that one hectare now required 2.64 tons of 3-bud setts compared to 10-11 tons when using the entire stalk. Planting costs were reduced by 30% and by using lighter, 3-bud setts, rather than the heavy and clumsy entire stalk, they could use oxen-drawn carts meaning that the women began looking for work. That in turn meant the coop could form more brigades and plant their cane faster, finishing in two weeks in the rainy, spring season and only one week in the colder, winter season. With respect to the mechanical, combine harvest, the 3-bud sett fields, due to their greater productivity, meant less expense in fuel and additional costs to harvest the same amount of cane.

In addition to the above commercial trial, the coop planted an open-air, one-hectare nursery of 6250 m² (1.0m x 0.6m x 0.2m) in order to propagate more efficiently a new variety. One hundred single-budded setts were planted in each m² (10 cm x 10 cm). The germination was 80% and only 1.98 tons of cane was needed. This system will be used throughout the coop to have plants available to replace areas of poor germination. Interestingly, even though the coop is seven kilometers from the road, people starting visiting and commenting as “word of mouth” is synonymous with internet in Cuba.

Presently, there are 19 cane producers in the province of Las Tunas from the municipalities of Amancio, Manatí, Columbia, and Guiteras with 50, 60, 300 and 500 ha of cane planted according to a double-row, 3-bud sett arrangement, respectively. Unbelievably, the results of the initial, single-sett plastic bag trial in Pinar del Rio (see www.AgSri.com) have served as a catalyst to challenge farmers with respect to planting sugarcane. The dozens of institutes pertaining to the Cuban sugar industry will surely determine a more specific regional ecosystem approach to SSI, meanwhile a video of the entire production scheme in the Las Tunas coop (UBPC “Diego Felipe”) will be produced and circulated throughout the island. Finally, a top-level extensionist from INICA (National Institute for Sugarcane Research) has been assigned to follow and promote SSI, nationwide.

As a final commentary as to the state of SSI in Cuba, the same small group that recently visited Las Tunas, three months later, re-visited the coop in Pinar del Rio that initiated SSI in 2011. We presented its members with the information obtained from the visit to Las Tunas. They will immediately plant 6 ha of 3-bud setts and continue with the single sett plastic bag arrangement as refill material for areas of poor germination.

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