

Significant achievements 2018



- The ACoRD (Automated Coffee Leaf Rust (CLR) Detector) software was developed by IICA to objectively determine the incidence of CLR across farms in Jamaica. The software, which uses high resolution digital images of the entire coffee plant to estimate CLR incidence, is an important component of the ongoing impact assessment of the effectiveness of the Early Warning System for Coffee Leaf Rust – a climate tool for farmers’ decision-making in the management of the disease. The impact assessment is being conducted by partners – International Research Institute at Colombia University and University of Arizona in the USA –, the Coffee Industry Board of Jamaica, the University of the West Indies Geography Unit at Mona, and Jamaica Meteorological Services, with the participation of 18 Blue Mountain coffee growing communities.
- The Institute collaborated with Purdue University to determine if new or more aggressive strains of CLR were emerging on local farms over time, which would require changes in coffee production and management practices. In 2018, research involved the collection of leaves from coffee farms sampled in 2016, in order to determine if a change in the genetic make-up of the rust had occurred after two years. Due to the high occurrence of a natural parasite of CLR, *Vorticillium* sp, the population of CLR spores was insufficient to conclusively determine if a genetic change had occurred over time. *Vorticillium* sp destroys the spores of CLR, which provide the DNA used in these analyses. Thus, a major finding from this research is the high occurrence of *Vorticillium* sp on all of farms sampled, which was not as prevalent in the 2016 study. Thus, the potential exists to encourage the growth of *Vorticillium* sp as a component of the CLR control strategy for farmers in Jamaica.
- IICA, in partnership with the Rural Agricultural Development Authority (RADA), trained approximately 100 persons in soil fertility and management. The training programme comprised separate training sessions with four groups over a period of six weeks. The training sessions covered soil fertility and conservation management, particularly for farming on steep slopes, and included field sessions to demonstrate soil conservation practices, such as the establishment of contours, planting of live barriers, and the establishment of reverse slopes and individual basins.
- IICA, Penn State University, and HarvestPlus Latin America and the Caribbean introduced key stakeholders in Jamaica to the concept of biofortified crops and the successes in using this approach to address micronutrient deficiencies in over 60 countries. This initiative was well received, and during Caribbean Week of Agriculture 2018, IICA received the endorsement of the Council for Trade and Economic Development (COTED) for the Caribbean Community (CARICOM) to form a CARICOM Working Group of regional organisations for the adoption and consumption of biofortified crops, as a component of a regional strategy to address dietary micronutrient deficiencies and Non-Communicable Diseases (NCDs) in CARICOM. At 80%, CARICOM has the highest rate of NCD-related deaths in the Americas.



- IICA, in collaboration with the Research and Development (R&D) Division of the Ministry of Industry, Commerce, Agriculture and Fisheries (MICAFA), conducted Year 2 of a field trial to investigate the efficacy of *Beauveria bassiana* as a fungal biocontrol agent, when applied to the soil, for the management of sweet potato weevil in Jamaica. The field trial comprised three treatments:
 - o **Treatment 1** - one application of the biocontrol agent at transplanting of the sweet potato slips,
 - o **Treatment 2** - two applications of the biocontrol agent at transplant and lay-by application of fertilizer, and
 - o **Control** - no application of the biocontrol agent, under production practices prescribed in IICA's Beauregard Cropping Calendar.

The research team analysed the levels of damage caused by the sweet potato weevil in roots and vines; the weight, length and width of storage roots; and the different life stages of the weevil, recorded at biweekly intervals after storage root initiation. The best control of the Sweet Potato Weevil was obtained when the *Beauveria bassiana* was applied twice during the crop production cycle.

- At the request of the Agricultural Competitiveness Programme of the Ministry of Industry, Commerce, Agriculture and Fisheries, IICA facilitated a Performance, Vision and Strategy (PVS) Assessment of Jamaica's Food Safety, Plant Health and Animal Health control systems. The assessment was undertaken by a team from IICA, which conducted interviews with over 50 stakeholders from these sub-sectors. The scores derived from using the PVS tool inform on critical components of each control system

in the sub-sectors assessed. Comparisons with the PVS scores from 2012 for Plant Health and Food Safety verified the progress achieved over the period, as well as areas for improvement. A Common Vision Session was also held with a smaller group of representatives from the sub-sectors to present and discuss the findings of the assessment.

- The Institute completed a feasibility study on using persons who participate in the Seasonal Agricultural Workers Programme (SAWP) to transfer knowledge and skills to local farmers. SAWP is a Ministry of Labour and Social Security Overseas Employment Programme, in which agricultural workers are recruited to work during planting and harvesting seasons in Canada. Almost 80% of the SAWP farm workers indicated that they had been exposed to new techniques on the Canadian farms, and 89% of those interviewed had participated in the SAWP for over four years. Thus, the farm workers acquired new competences; several had begun to apply these techniques upon return to their farms in Jamaica; and the majority were willing to share their knowledge with other farmers. Utilising this information, IICA drafted a proposal to implement a pilot programme for the SAWP farm workers to share their knowledge with local farmers.
- IICA continued to strengthen the capacities of selected producer groups. The Delegation assisted the Jamaica Network of Rural Women Producers (JNRWP) to form seven clusters in five parishes, as part of the JNRWP's drive to strengthen its organisational structure. Two training sessions were also organised – one in record keeping and the other in conducting meetings – for farmers from the Serge Island, St. Elizabeth and Rhymesfield dairy groups.

