

Research Project

ISCB: Biofertilization and bioirrigation for sustainable mixed cropping of pigeon pea and finger millet

Third-party funded project

Project title ISCB: Biofertilization and bioirrigation for sustainable mixed cropping of pigeon pea and finger millet

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Organisation / Research unit

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Department

Project start 01.05.2014

Probable end 31.03.2017

Status Completed

In this project we will build on the experience of partners of the previous ISCB biofertilizer network and that of new Indian and Swiss partners to use arbuscular mycorrhizal fungi (AMF) and plant growth-promoting rhizobacteria (PGPR) as "biofertilizers". Central to our approach is a mixed cropping system of finger millet and pigeon pea, which will make optimal use of the biofertilizers by the allocation and re-distribution of water through hydraulic lift ("bioirrigation"). Our principal output will be a "package" consisting of seeds for mixed-culture and compatible strains of biofertilizers of Indian origin, to be used by small-holder farms, especially in rainfed and saline fields in South India, where most of the current finger millet production takes place. In more detail, our "package" will be composed of polybags containing seeds of a pigeon pea cultivar suitable for transplantation, specifically selected to suit our proposed "bioirrigation" scheme, with an appropriate inoculum of biofertilizers, i.e., selected strains of AMF and PGPR; and seeds of a finger millet cultivar optimally suited for biofertilizer- and bioirrigation-enhanced performance in mixed culture with pigeon pea. Our biotechnological "package" will be a ground-breaking tool for rainfed fields not only in India, but on a global scale.

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