

# “This is my own innovation”: the history of Limpo grass

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Livestock keeping is important in the Huetar Atlantica region among large-medium- and small-scale farmers and began 40 years ago with the felling of primary forest. Pasture soils are generally shallow with low fertility and farmers have suffered several setbacks in recent years. One of these was the introduction of Ratana (*Ischaemum indicum*). This “improved” variety is now the main grass in the region but it has turned out to be unproductive and low in quality. It is also coarse, resistant to humidity and difficult to eradicate from pastures.

## A new grass takes root

During the 1970s, a local farmer brought a new grass from the United States and cultivated it on his farm for 3-4 years without anyone noticing. He then gave up farming and gave samples of the grass to a nearby Experimental Research Station. Here it was tested and eventually discarded in 1982. In 1981, a technical advisor from the Ministry of Agriculture (MAG) took a small sample of this grass to Pueblo Nuevo and handed it to Mr. Nardo Herrera who, having planted it on a damp part of his farm, prepared to test it in his own way. William Ratana, a neighbour who bred and fattened cattle, watched how this grass grew. He noticed that it never disappeared and that it could withstand flooding. He liked it and, in 1992, he invited a recently arrived technical advisor to his farm and asked his opinion.

## Limpo grass

The extensionist had never seen anything like it. He took the sample to the university for classification. Researchers discovered that its scientific name was *Hemarthria altissima* or *Moralta vigalta*, it came from Africa and grew in humid are-



as. The extensionist passed on this information to William Ratana who decided to plant the Limpo grass on a hectare of flood-prone land, near a road, where Ratana had been grown and which was nearly always covered with weeds. Today, he grows 7 hectares of Limpo and is satisfied with the results. “I watched the Limpo grass covering the ground aggressively, the cows producing more milk, calves growing fatter, the Ratana disappearing and the cultivated area increasing.”

## Innovating farmers' workshop

In 1995, MAG staff organised the “First innovating farmers' workshop on grassland of Huetar Atlantica”. Eighty farmers participated and six gave talks on their experiences as innovating farmers. William Ratana presented his Limpo Grass experience as “his own innovation”. The extensionist helped him prepare his presentation. Willam showed photographs of the grass at different stages of growth, in different fields and of pastures developed under different management regimes. Above all, he spoke of the benefits of the grass as he saw them and had no difficulty in communicating his experiences to the workshop even though he had never spoken in public before.

William Ratana distributed the sack of Limpo planting material he had brought with him to the farmers attending the workshop. Neither his neighbours or the other farmers there had heard of the grass before. He is now testing five other grass varieties on his farm: *Briachiaria brizantha*, *B. dictyoneura*, *B. radgans*, *B. bumidicola* and *Panicum maximum*.

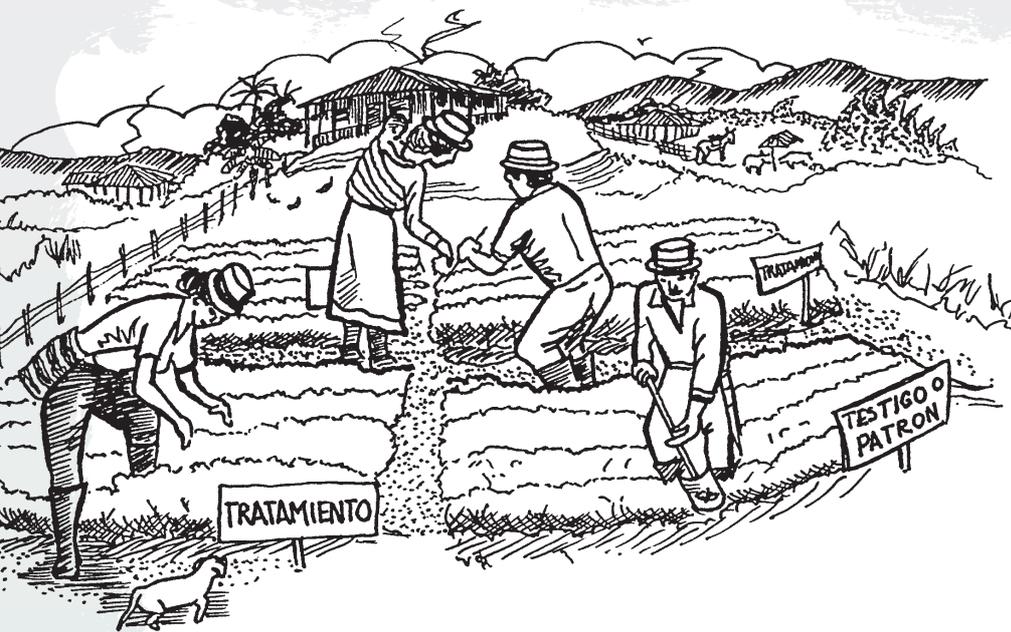
## Comparing and sharing experiences

In July 1999, technicians held another farmers' meeting to discuss Limpo grass. Twenty-farmers who had experimented with it attended and they told how they had used it in their own specific agroecological situation (altitude, fertility, size and type of farm). They reviewed their 4 years of experience in the context of plagues, diseases, acceptance by the cattle, deficiencies and tolerance. This information will be used to prepare a practical manual.

## Fast dissemination

Local farmers are generally hesitant to introduce new grasses because of the high investment involved (about US\$200/ha). Nevertheless, Limpo grass is spreading fast. It can be found in livestock farms from the San Juan River in the northern part of the country to Talamanca in the





south. It has partly replaced Ratana. It is good for producing milk and meat and although it responds well to chemical fertilisers, it can also be grown without them. It recovers quickly from flooding and prefers damp, fertile soils although it cannot withstand acidity or permanent flooding.

### What did scientific research bring?

From 1987 to 1996, 250 types of grass and 204 varieties of legumes were subject to scientific screening at the Experimental Research Station. They were examined by local experts and researchers from prestigious international centres and all varieties were evaluated by technicians and researchers. The two that proved to be the most outstanding were *Brachiaria brizantha* and *Arachis pintoi*. The former cannot resist humidity and is eliminated by fungus; the latter spreads very slowly. Most of the FEs in the region knew about this collection but, according to them, all planting material of these species had been lost.

### Farmers use other indicators

When evaluating the different materials, researchers in the station placed priority on biomass production and resistance to plagues and diseases. The livestock-keepers, on the other hand, take more than ten factors into consideration: resistance to humidity; yield; rusticity, hardness; duration; resistance to diseases, plagues, rains and drought; ability to recover after cutting; aggressiveness and competition with weeds; sowing facility; propagation; acceptance by different animal species and the capacity to cover the soil.

The research station probably had promising varieties that might interest livestock-keepers. How many varieties were lost because of mistaken research and extension strategies? How much was invested in pasture research that had no positive result?

### Growing benefits

Livestock-keepers in the region benefited little from the research stations work.

However, through the tenacity of an experimenting livestock-keeper reinforced by the vision and creativity of an extensionist worker, Limpo grass - that had been present in the research station for nearly a decade and finally discarded - was introduced onto some 300 ha. Limpo grass can support twice as many livestock as Ratana and as a result farmers have been able to double their meat production and make a profit of about US\$ 200/ha. Annual profits equivalent to US\$ 60,000 are already being made throughout the region as a result of the knowledge of Limpo shared at the first FEs workshop. How many benefits to-morrow?

### Supportive technical advisors

The moment when Limpo grass began to spread in this area is well defined. The starting point is precise, the names of the responsible livestock-keepers are well-known, and working mechanisms implemented by extensionists very clear. Rapid dissemination was boosted by agents who encouraged the monitoring of farmer experimentation, organised a second

farmers' meeting and promoted farmer cross-visits. These extensionists fought against the guiding principles of their institution. They stopped giving talks on grasses and started to organise events at which farmers were allowed to talk and discuss their doubts, achievements, results and misgivings with extension workers.

### Change in working methods

As a result of these promising experiences, the group of extension agents began changing their working methods. First of all, as professionals, they understood the need to document these types of activities. Second, as they become convinced that farmers form part of the chain that creates knowledge, they are reversing the conventional research organisation system. Gradually, they started to encourage farmers in the region to use their ability to observe, experiment and share, and to form groups of FEs. Third, they have started to gain more confidence in the value and usefulness of exchanging knowledge between livestock-keepers, technical advisors, public and private researchers and academic centres, in order to promote local innovation.

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