

# Adoption and diffusion processes of silage technology in the area of Yoro, Honduras

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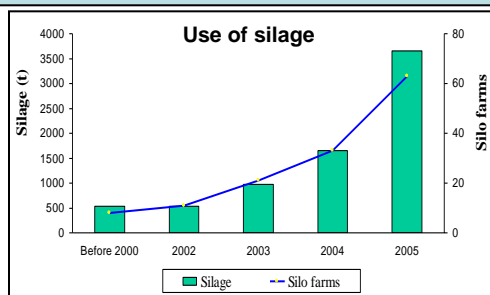
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## Introduction

Feed shortage during the 5-6 month dry season in extended areas of Central America severely limits livestock production. A feeding strategy to overcome this constraint includes silage preparation during the rainy season. However, adoption of forage conservation methods by small-scale farmers in the tropics and subtropics generally has been low. Reasons include high investments required, lack of know-how and of knowledge of appropriate low-cost

alternatives. In 2002, CIAT and its partners identified both the need and demand for forage conservation technologies by farmers in the area of Yoro, Honduras. Silo types such as heap and earth silos and especially little bag silage (LBS) were offered during farmer trainings and field days in order to catalyze innovation, adoption and dissemination processes of silage technologies with and by small-scale farmers.

## Results



### Silage adoption

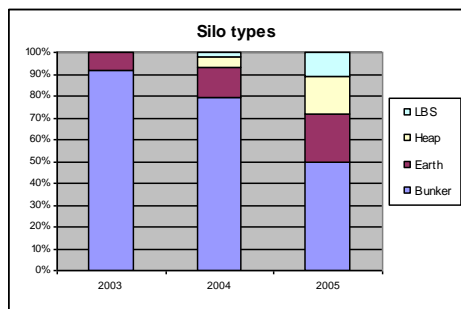
Over the last three years, silage adoption showed high annual growth rates (91, 57 and 103%). Presently, 67 farmers use silage. In the same period, the quantity of forage ensiled increased by 82, 71 and 135%. Presently about 3,880 t are ensiled.

Until 2003, only medium- and large-scale farmers used silage. From 2003 to 2005, the share of small-scale farmers rose to about 20%.

## Adaptation processes

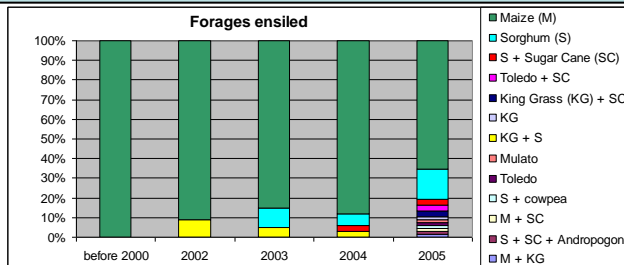
### a) Silo types

Until 2003, farmers used mainly the common bunker silo type that involves an initial investment of about US\$ 600 for materials and construction (30 t forage capacity). Since 2004, the use of alternative low-cost silo types has increased to 50% (11, 17, 22% for LBS, earth and heap silo respectively).



### b) Forages ensiled

While until 2002/2003, 91% of the farmers ensiled purely maize, the present share is about 65% with increasing use of improved pasture grasses (*Brachiaria brizantha* cv. Toledo and *Brachiaria hybrid* cv. Mulato, *P. purpureum* x *P. glaucum* cv. King Grass), sugar cane, *Vigna unguiculata* (cowpea) and particularly sorghum, ensiled alone or in mixture.



## Conclusions

Early adopters began to apply silage technology already in the late 1980s. However, adaptation and diffusion processes did not initiate before 2003 as result of intensive promotion of silage during field days, group meetings and personal visits including technical assistance. The most relevant factors for the increased spread of silage technology are (a) continuous promotion and multi-actor information exchange, (b) the presence of farmer associations and innovators who act as key communicators, (c) guaranteed purchase

of milk, and (d) increasing use of cross-bred European dairy cattle. Silage has become an integral part of farmers' production systems and has proven effective in overcoming dry season feed constraints and increasing gross livestock production and productivity. Dissemination of silage technology is expected to continue in the next years even without organizational support since more than 20% of cattle farmers in the region already use silage, and farmer-to-farmer diffusion is taking ownership of the process.