

Agrotec (2012) 2: 62-66

The usage of forage maize hybrids in organic farming.

Ana B. Monteagudo

¹Instituto Galego da Calidade Alimentaria - Centro de Investigacións Agrarias de Mabegondo (INGACAL-CIAM). Apartado 10, 15080 A Coruña. España. e-mail: anamonteagudo@ciam.es

Keywords: organic farming, forage maize, maize hybrids.

Abstract

The concern with preserving the environment and consumer health has been increasing in recent years. This situation is promoting changes in agricultural management including in the extensive livestock production sector. This sector is now struggling to achieve the ever more demanding environmental requirements of sustainable agriculture and a shift towards organic farming seems imminent. Despite this, the area devoted to cultivation of forage species in organic systems is still very low.

The agriculture research institute of Mabegondo (CIAM-Spain) has been developing breeding programs of maize hybrids using local varieties from Galicia as their genetic base. Since 2008 the agronomic behaviour of some of these hybrids, when cultivated under organic farming, has been studied. In 2008 and 2010 the forage potential of 31 S3 hybrids was evaluated in different field trials located in Lugo and Ourense. The new forage maize hybrids showed great variability with significant differences for almost the studied characters. The average organic matter content was around 96% and digestibility was over 69%. The average value of protein content was 4.85%. The overall forage yield of the hybrids was 8.84 t/ha. CIAM hybrids scored better than commercial hybrids for many agronomic and nutritional characters. Among CIAM hybrids, lines 954, 958 and 979 clustered as a group due to their earliness (around 78 days to male flowering), forage yield (10 t/ha), high protein content and low fibre content. Hybrid 956 excelled due to its high forage yield, protein and fibre content. Although hybrids 949, 952 and 971 did not have very high forage yield, they stood out due to their good nutritional quality, especially 952 with high protein content and 971 with low fibre content. The CIAM hybrids evaluated in this study were comparable to commercial hybrids in terms of general yield when cultivated under the same conditions. Therefore CIAM hybrids can be considered as good candidates for organic farming.