

The transformation of agriculture in Argentina through soil conservation

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Abstract

The adoption of no till was a major turning point in the transformation of agriculture in Argentina. This paper describes the process of adoption of no till, and the impacts of this on agricultural production. Whereas previously, soil erosion was so extreme and pervasive as to threaten the economic viability and survival of the industry, today with the majority of production under no till, Argentina produces more than ever in the past. The paper also illustrates how, after first focusing on technology adoption (no-till), the system in Argentina has now broadened to include the concepts of Conservation Agriculture (CA) and Sustainable Land Management (SLM). These strategic moves have contributed to an agricultural industry in Argentina that is more economically and environmentally sustainable than that of the past.

Key Words: Soil conservation, No-till, Conservation agriculture, Sustainable land management

1 Introduction

The agricultural production system in Argentina evolved originally in patterns similar to those of Europe and the Americas. This process was rooted in the premise that it was necessary to cultivate (till) the soil to achieve a proper seed bed and for weed control. However, in the tropics and subtropics, where intense, often short duration rains are common, this system resulted in serious soil erosion, agricultural pollution of water courses, etc. Also, wind erosion was a concern in dry periods. The seriousness of the erosion ultimately became so grave as to possibly threaten the long term viability of the agricultural industry. Something had to change.

During the 1960's a group of innovative farmers came together to deal with the problem. Together, and with backup support from research institutions and universities, they opted to try the no-till approach, at that time still in experimental mode in the US. This decision and follow up activities totally transformed the agricultural production systems in Argentina.

In 1989, this informal group was organized into the Argentina No Till Farmers Association (AAPRESID, www.aapresid.org.ar). During the 1990's and along with farmer associations with similar objectives in Brazil, Mexico, Paraguay, and Uruguay, these organization later coalesced into the American Confederation of No Till Farmers Associations (CAAPAS, www.caapas.org). Currently, CAAPAS has eleven permanent and invited members, with representation from farmer associations from USA, Canada, and others. AAPRESID continues to play a fundamental role in the evolution and spread of no till agriculture in Argentina.

The objective (s) of AAPRESID and CAAPAS are to develop and promote farming model (s) that allow the achievement of an improved productivity, profitability and competitiveness in the short term, while moving towards a level of agriculture that is more sustainable than that practiced previously. The Argentina no till farming system is known as the Modern Sustainable Highly Productive and Profitable Agricultural model principles (MOSHPPA). The adoption process has included all major crops in Argentina.

AAPRESID organizes and delivers on several activities, namely the Annual National Congress (the last edition received around three thousand attendees); development of field trials; promotion of field days and seminars for technological exchange between domestic and foreign farmers; and the promotion of joint research and extension

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activities with universities, agricultural research centers and private companies. In addition, AAPRESID actively promotes the establishment of regional groups, around thirty at the present time, scattered through the different production areas of the country. With experience, these AAPRESID regional groups have evolved as one of the more important players in the future growth of the no till system in Argentina (Peiretti, 2003, 2005).

2 Adoption of no till in Argentina

The first trials in Argentina started in the early 1970's, but it was not until the 1990's that the adoption process ballooned (Fig. 1). From a couple of hundred thousand hectares in 1990, the adoption jumped to more than 23 million ha, or around 79% of the Argentinean grain cropped area in 2010/11 (Fig. 2).

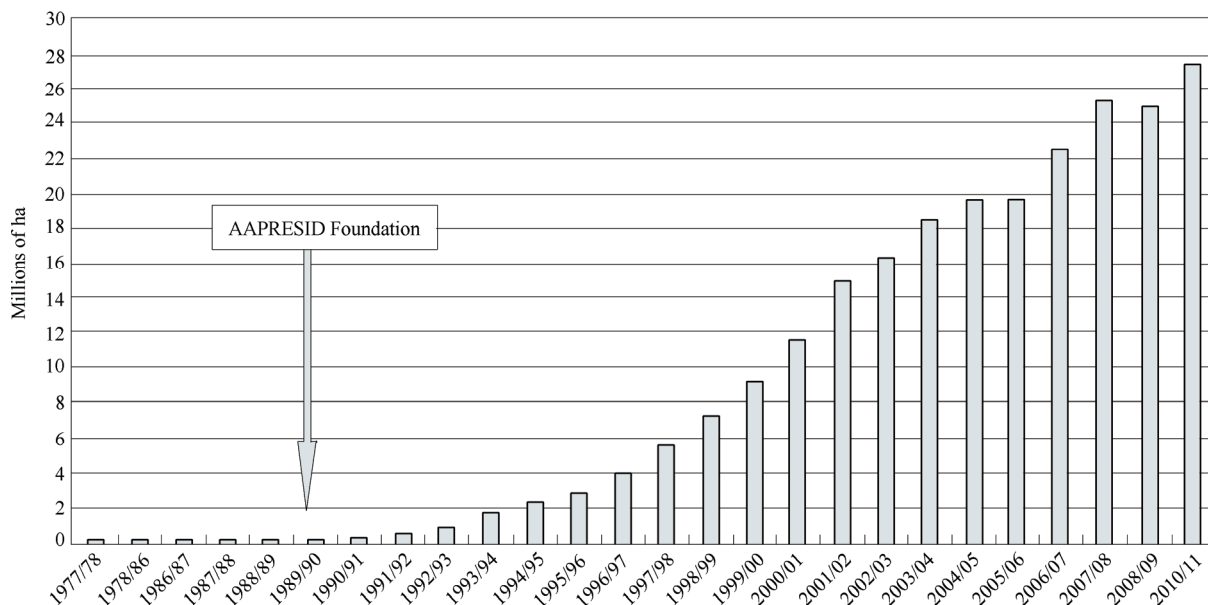


Fig.1 Evolution of no-till adoption in Argentina (millions of ha, 1977/78 - 2011/12) for major crops
 Source: Aapresid, statistics available on request at www.aapresid.org.ar.

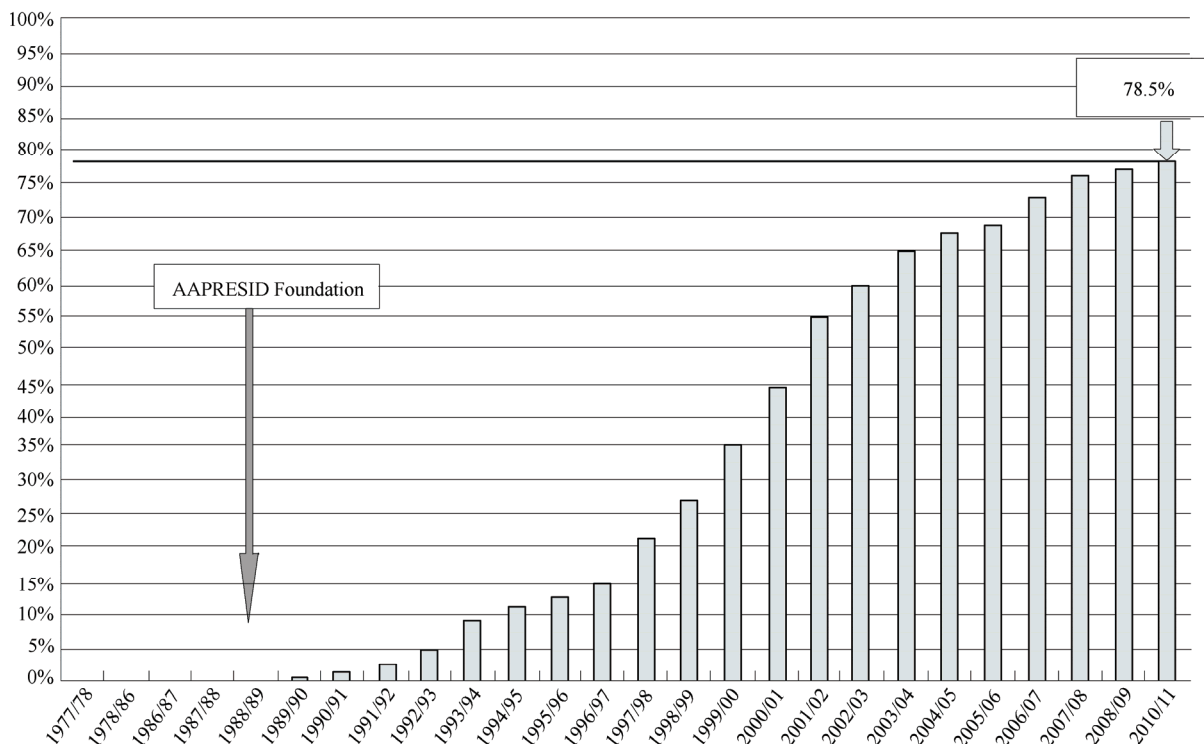


Fig.2 Argentina: Evolution of No Till adoption in percentage of total area cropped with major crops
 Source: AAPRESID (www.aapresid.org.ar).

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