Controlled Traffic Farming in Argentina: challenges and opportunities

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ABSTRACT

Background

In Argentina, agriculture related activities account for *c*.20% of the country's GDP and represent the sector with the biggest prospect for growth[1]. Intensification of agriculture and increased output will necessitate rapid adoption of sustainable technologies and their integration with those already in place. Current estimates indicate that the area under no-tillage cropping in Argentina is *c*.20 million ha representing, approximately, 70% of the total arable land[2]. To a large extent (*c*.70%), this area is continuously cropped using permanent no-tillage[2]. In such systems, however, the occurrence of compaction in the topsoil can still be significant despite the relatively lower traffic density compared with conventional tillage practices[3,4]. Controlled traffic farming (CTF) is regarded as a practical and cost-effective technology to reduce field traffic induced-soil compaction[5]. Further, it has been demonstrated that CTF has fundamental advantages in improving soil structure thereby enhancing crop and environmental performance with reduced inputs of energy and time[5]. The aim of this paper was to identify some of the challenges and opportunities for potential use of CTF in Argentina. Further work is needed to assess the practicalities, costs, drawbacks and deliverable benefits of CTF at local level.

Discussion and Conclusions

Controlled traffic farming remains a novel concept for most farmers in Argentina and therefore current uptake of this technology is almost non-existent. Hence, a key requirement is to use the store of information available with emphasis on knowledge/technology transfer and development drawing from the well-established experience and knowledge-base internationally. Applied research into CTF in Australia is of particular relevance to Argentina due to similar scales and labour unit to area ratios of cropping enterprises. A current development into CTF is a privately funded joint venture called CTF Argentina, which aims to: (1) increase the awareness of CTF and its implementation as a means of improving farm profitability; (2) promote on-farm action-learning research[6] activities to: (a) determine if the expected benefits can be delivered, and (b) develop appropriate, cost-effective CTF systems; (3) disseminate the knowledge through farmer-oriented workshops; and (4) encourage machinery manufacturers to customise products. Knowledge transfer will require a group of research and extension specialists who need to be

mentored by those with proven experience in the field. Mentoring may be achieved using the range of technology networks available including independent and private organisations, and government-funded research and extension institutions. These bodies need to be alerted to the synergism of CTF and no-tillage[6] and encourage land managers to shift from a largely production-driven approach to farming to one that can deliver long-term economic and environmental benefits which has been demonstrated by earlier studies[4,5,6].

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