

Part 4 - Final Report Plain English Summary

You must submit a Plain English Summary of your completed research project that is not commercial in confidence, and that can be published by the Cotton Research & Development Corporation in print or on the world wide web. An electronic copy of the Plain English Summary must also be forwarded by E-mail (angela@crdc.org.au).

The distribution of anhydrous ammonia across application toolbars onto agricultural crops, particularly cotton, had been highlighted as a major industry problem in recent times, especially in Australia and the USA. Research into other metering and distribution problems related to anhydrous ammonia had taken precedence since it was first applied in 1935. This research project however has allowed the problem of poor and highly variable distribution to be addressed in a practical fashion, resulting in the development of a new anhydrous ammonia distributor, the *Trangie Rotaflow*. The new distributor has reduced lateral variability to more acceptable levels, in most cases less than half that of other commercial manifolds. This has been verified not only in tests performed by NSW Agriculture at Trangie but also in the field by Iowa State USA researchers, where comparisons between conventional technology and the *Trangie Rotaflow* have been performed.

The distributor is now patented in Australia and the USA, with an application still outstanding in Canada. The distributor is being manufactured by H.I. Fraser Pty Ltd in Warriewood, Sydney and being marketed and supported in Australia through Incitec Fertilizers outlets. Marketing opportunities are currently being sought overseas, particularly in the USA. Over 100 distributors have been sold in Australia, with results from the 1999/2000 crop being particularly exciting. No striping has been found on any area where the *Trangie Rotaflow* has been used, whilst many adjacent areas where conventional technology has been used has resulted in "huge" striping differences. Accrued benefits include decreased costs due to reduced N applied and better uniformity leading to easier crop management. Growers using this technology also won local cotton industry awards.

In addition to this major distributor development has been the development of a world-class anhydrous ammonia measurement facility. This facility has allowed the accurate measurement of both flow and distribution of anhydrous ammonia in a controlled atmosphere environment. It has also allowed a range of operating parameters within the various systems to be rigorously tested. With the closure of the project, this system has been decommissioned at the Agricultural Research Centre at Trangie.