



# Using Fertilizer Swaps to Reduce the Risks from Volatility in Fertilizer Prices

## Dr. Marcelle Arak

Professor of Finance,  
University of Colorado at Denver

## Luke Brummel

Analyst, Knowledge Exchange  
Division, CoBank

### Inside this Issue...

Executive Summary .....	1
Introduction .....	2
Background on fertilizer price movements over time.....	2
How do fertilizer swaps help buyers or sellers of fertilizer .....	2
How does a fertilizer swap solve the price uncertainty .....	4
Basis risk: how well do the benchmark swap prices move in sync with local prices?.....	5
How liquid are the fertilizer swap markets?.....	7
What about transaction costs?.....	8
Activity on the CME's Clearport .....	8
Will cleared fertilizer swaps be more successful than the CME futures contracts of the early 1990s?.....	9
Where are the fertilizer swaps markets headed?.....	10
Concluding remarks.....	10
Appendix.....	12

### Key Points:

- **Futures contracts have not been available for fertilizers, except for a few years in the early 1990s; and those earlier contracts were unsuccessful and discontinued.**
- **Fertilizer swaps are another type of financial contract that has been traded over-the-counter for about the past ten years.**
- **Fertilizer swap contracts cleared through the CME became available in July 2011. Market-cleared swaps virtually eliminate counterparty risk.**
- **Unlike the earlier fertilizer futures, market-cleared fertilizer swaps are cash-settled, both daily and at contract expiration.**
- **Benchmark prices for urea and DAP fertilizer swaps are highly correlated with local Midwest prices of these fertilizers. Hence, basis risk appears to be modest for many, but not all, swap contracts and locations investigated in this study.**
- **Judging by the volumes of open interest and bid-ask spreads, the current fertilizer swap markets have enough liquidity to handle small to medium-sized transactions – but maybe not to accommodate large transactions.**
- **Market-cleared swaps are not a panacea, but they do have a useful role to play as one element in an overall risk mitigation strategy.**

### Executive Summary

Fertilizer swaps provide a way for buyers and sellers of fertilizers to meet through a broker and lock in a price for a type and quantity of fertilizer for a future date. Fertilizer swaps, unlike forward contracts, are cash-settled, so that buyers never take actual delivery of the fertilizer. Basis risk occurs insofar as the benchmark prices used for settling swaps are poorly correlated with the fertilizer prices posted at various delivery points across the nation. Our review of the statistical evidence reveals that basis risk tends to be acceptably low for urea and DAP swaps, but is problematic for UAN 32% swaps. Further, the Chicago Mercantile Exchange recently began offering a “clearing service” which eliminates counterparty risk on fertilizer swaps. The London Clearing House also offers clearing. Liquidity, however, remains an issue. Some potential users are concerned that trading activity is too thin to ensure that fertilizer swaps can be executed quickly and at prices reasonably close to the initial quotes.