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Fluid Fertilizer Industry Showing Significant Gains In Argentina

UAN and N-S solutions widely adopted by top corn and wheat growers.

Argentina is currently considered one of the major agricultural areas of the world, with most activity centered in the Pampa region of converted natural grasslands of Buenos Aires, Cordoba, and Santa Fe provinces. This extensive region of 52 million hectares ranges in precipitation from about 600 mm (24 inches) in the more semiarid western regions up to about 1,100 mm (43 inches) in the more humid east. Cereal grain agriculture began in the 1870s with rapid expansion until 1937, after which agricultural activity diminished. Mechanized agriculture grew in importance beginning in the 1970s, but lagged behind other countries due to access to technology and large-scale international capital.

Argentina has experienced significant development of its fluid fertilizer industry. Ten years after the introduction of fluids, and parallel to modernization of its agricultural base and increased fertilization, the use of UAN and N-S solutions has been widely adopted by the top corn and wheat growers.

Although most big players in the fertilizer industry are marketing imported UAN, development of the fluid industry has been spearheaded by just one firm: Petrobras. Petrobras has promoted the adoption of fluid fertilizers among the general population of farmers,



plus developed market niches via strategic investments. A recent development (2007) is a 130mt/y capacity plant producing ammonium-potassium-thiosulfate (ATS).

Bullish growth

An article published in the Fluid Journal in 2005 discussed the initial developmental steps in the Argentinean fluid industry a decade after its first introduction. The article correctly predicted significant development within the fluid industry (Table 1), which has been met within the last two years via bullish markets in both grains and fertilizers. It also correctly predicted plans for new facilities by interested firms. Annual growth rate of fluid fertilizers in Argentina

has been about 14 percent, double the rate of growth in the overall fertilizer market. This is due to the many advantages of fluids over solid fertilizers. It is also worth mentioning that all of South American agriculture has been expanding over the last two decades in an effort to cope with the increase in demand for agricultural, food, feed, and biofuel products.

But problems, too

Investment. Unfortunately, there are some macroeconomic and infrastructural constraints at the national level, such as investments in energy, ports (Table 2), transport systems, etc. that are slowing down many initiatives. Profertil, another part

of the Agrium group, had to put a 600,000 mt/yr UAN project on hold due to a lack of guaranteed natural gas for the expansion. On the other hand, there are a myriad of small farming operations investing in their own fluid storage tanks.

Investment to increase the receipt/unloading and storage capacity of UAN at ports is expensive and lacks easy financing. However, in the coming years there is a projected 60 percent increase in capacity for the major southern ports and on the Parana River in the northern region.

Financing. There is a chronic lack of financing to make infrastructural investments at the retail level.

Soybean preponderance

During the last decade, the increasing preponderance of soybeans, as opposed to cereals, has resulted in limits being placed on nutrient demand, and consequently N and N-S fluids.

Market slowdown. The slowdown in market growth over the last year is another factor that has resulted in questions about the future trend in the use of fluid fertilizers. For Argentina, while it obviously is impacted by external market factors, it also has its own internal politics. Our populist government, which favors internal consumption in an effort to fight against inflation, often affects export markets, which in turn discourages the sowing of cereal and grasses. This represents a clear and negative impact on wheat, corn, and pastures--staples that fuel the dairy and meat industries. Since these crops compete for land with soybeans and are cheaper to produce than cereals (no N fertilizers!), the result is an unstoppable expansion of

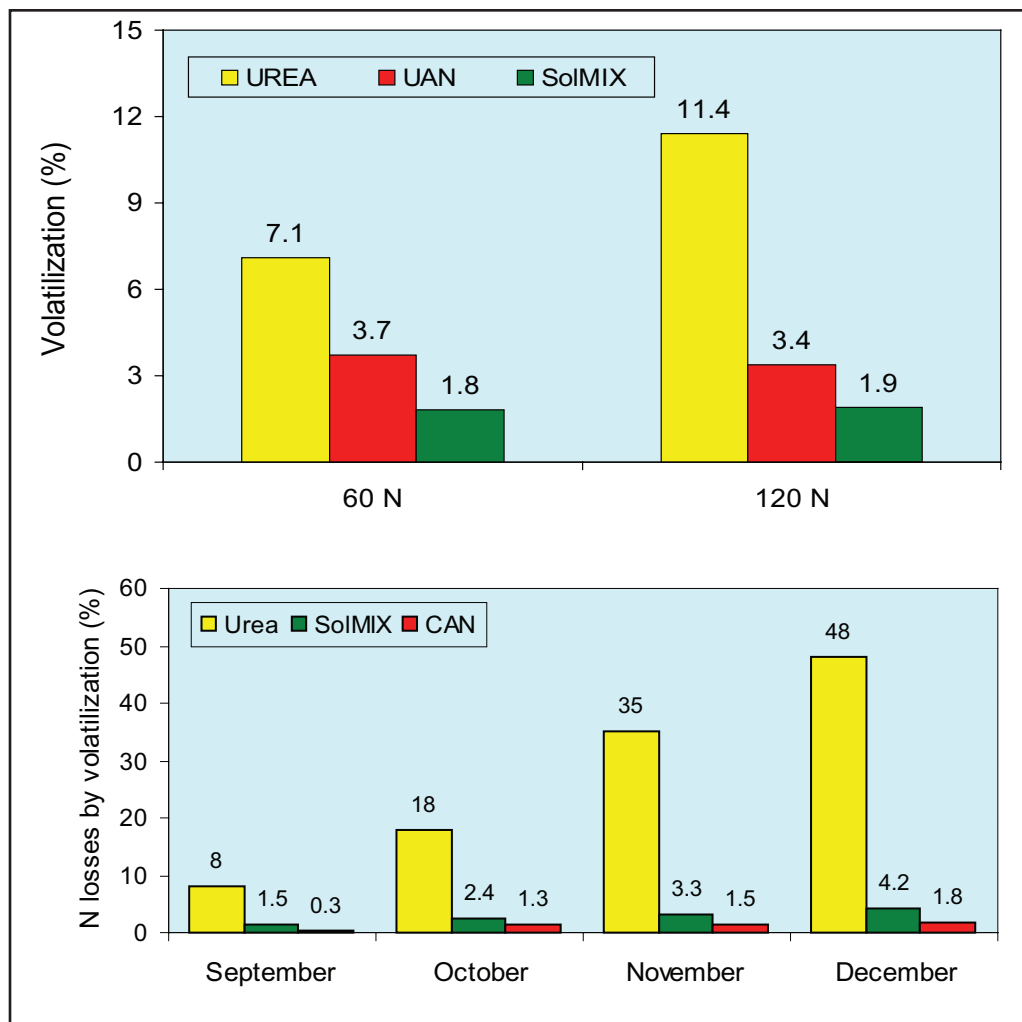


Figure 1. Volatilization of N of three sources in corn under no-till in two locations of Argentina, Rafaela (Fontanetto, 2005) and Balcarce (Echeverria, 2005).

	2004	2005	2006	2007	2008
	Thousand M tons				
UAN Imports	160	134	253	239	328
UAN Production	252	322	313	247	173
Total UAN	412	456	566	486	501
Urea Imp + Prod	928	721	865	1199	1256
AN	112	96	147	149	164

Table 1. Significant developments within the fluid industry.

Region	Port	Terminal	Actual	Projected	Mean 07/08
Thousand M tons					
North	S. Lorenzo	ACA	30		37.6
		Ponal		40	
	Rosario	Guide	10		36.4
		Profertil	40		94.5
South	S. Nicolas	Ponal	27		
		Campana	80		4.4
	Buenos Aires	TAGSA		65	8.5
		TAGSA			
	Necochea	Ponal	40		23.3
		ACA+		10	
		Petrobras		40	
	B. Blanca	Oil tanking	18		18.8
TOTAL			245	155	223.2

Table 2. Port deposit facilities to handle UAN in Argentina.

soybeans in the agricultural frontiers.

Mixes help

An important increase in the adoption of fluid fertilizer by grain growers was observed after the promotion of N-S solution mixes, and was further assisted by the establishment of ATS plants.

Normally, instead of offering UAN we now offer UAN-ATS mixes 28-0-0-5S (80 to 20%) or 30-0-0-2.6 S (90 to 10%) marketed as SolMIX®. Interestingly, this resulted in using one of the best selling points of this mix: the concern of N losses via volatilization (Figure 1). There is a well established concern by consultants, dealers, and farmers about broadcasting urea on established crops. By promoting the UAN-ATS mixes (supported by many field trials around the country) farmers easily adopted this highly efficient way of applying N. In addition, there is a domestic supply of crystalline and liquor AS, which may be used by the other small manufacturers of UAN or independent retailers who may market their NS solutions by their own channels.

AN concerns help

The growing global concern about ammonium nitrate (AN) has also resulted in increased demand for fluid fertilizers. The RENAR, a governmental bureau regulating explosives, must approve all deposits at

the wholesale distributor chain level (importers/producers, end-users) of products that contain AN. In practice, fertilizer warehouses must satisfy the same requirements of those for a powder magazine. The result has been the disappearance of the AN market and the partial replacement of it by calcium-ammonium nitrate (CAN) and UAN-ATS mixes.

NPS helps, too

Another significant boost in the development of the fluid fertilizers in the country will likely be in the development of NP or NPS solutions, which will fit as starters in the major grain crops. Today, there is no inexpensive source of fluid P that could be used to prepare such complex grades. Petrobras has planned a project for a 60,000 mt/yr plant for ammonium polyphosphate (APP) based on imported phosphoric rock, but implementation is unknown. It is interesting to mention that this firm planned to develop the use of suspensions but the project was abandoned some years ago.

Summing up

Meanwhile, in the short term, some think tanks of the fertilizer industry presume that the Argentinean model of development will follow that of the American markets some

years ago. That is, the gradual disappearance of bagged fertilizers and a switch to bulk and fluid products. An unknown is the future of the ethanol industry in the U.S. If last year's trends were to continue (the disruption caused by a lot of grain going to ethanol production) the shortage of U.S. corn in the export markets would have to be filled by South America. So, either by exporting corn grain or integrating the production with the agricultural chains of poultry and swine meats, Argentina must increase significantly its corn production - a longtime dream of the fertilizer industry.

No less important is the big gap in mean N rate used in corn compared to the U. S. The slow but sustained trend in increasing the average application of N per acre, in hand with an increase in the acreage devoted to this crop, will boost fluid fertilizer consumption. But since the future scenario foresees a greater interest in increasing nutrient efficiency (kg grain/kg nutrient), the spur in demand for UAN/NS would depend more on the efficiency of management methods associated with its use in order to improve productivity. In view of this prospect we may also see increased use of fertilizer additives to increase efficiency (urease, nitrification inhibitors, etc.).

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