



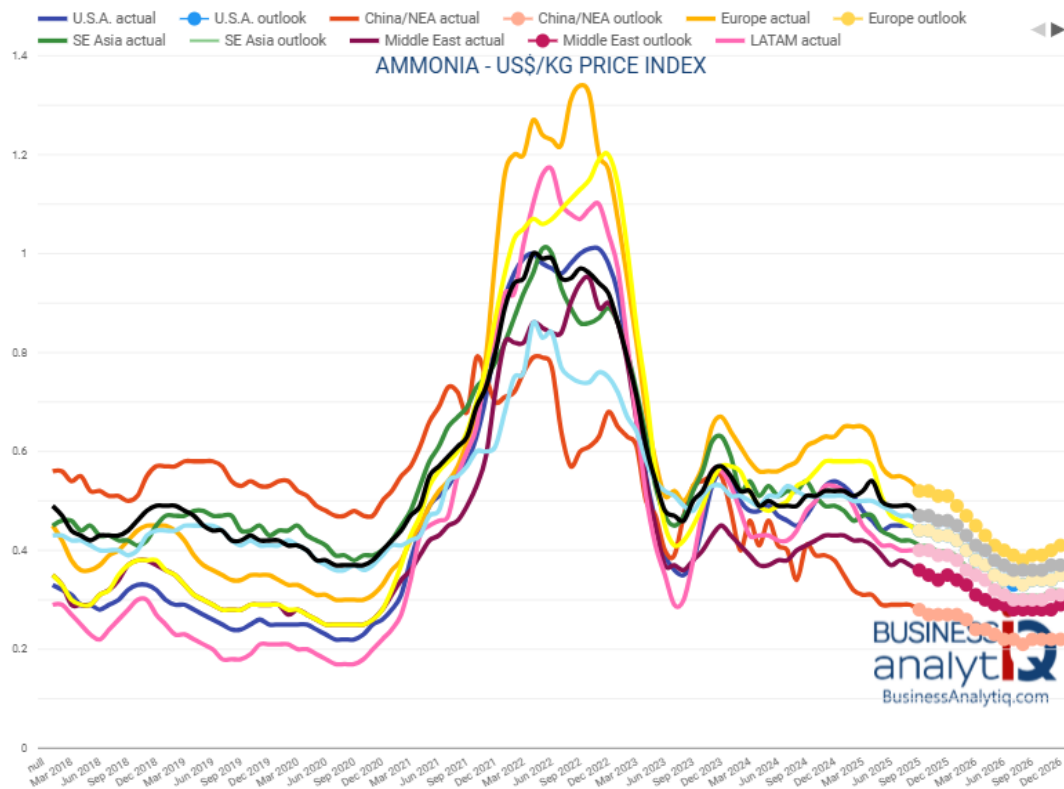
October 2025

AGRONOMY UPDATE

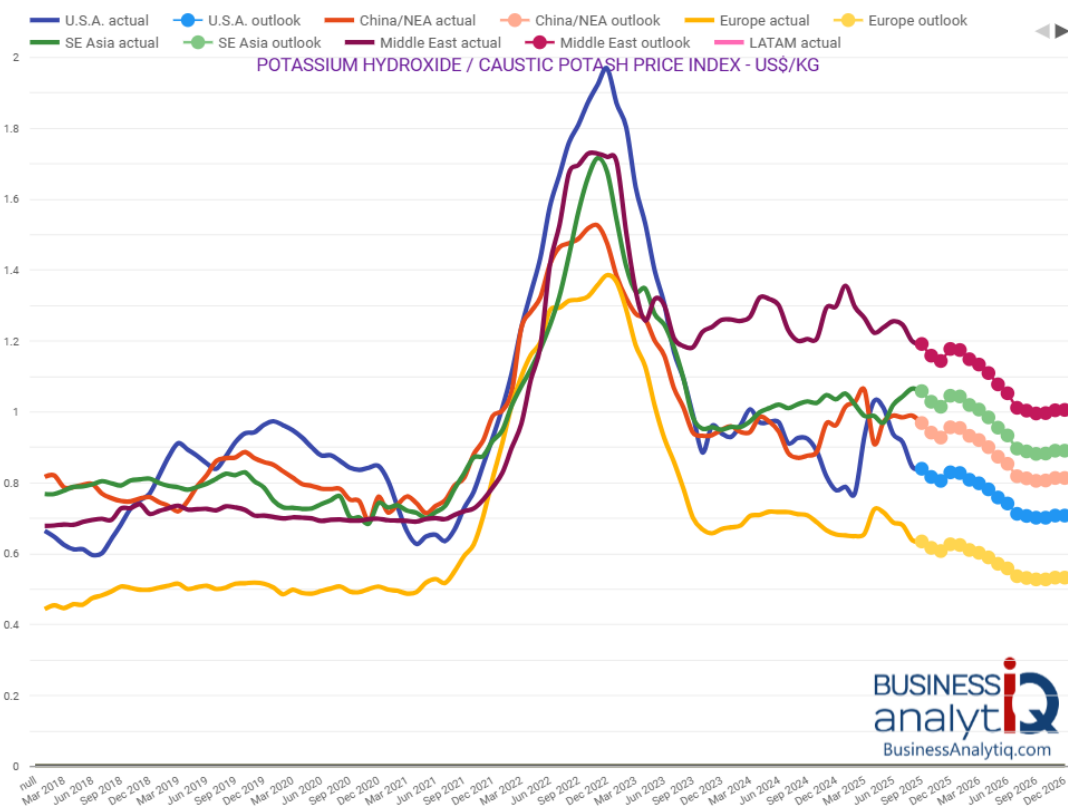
Fall Applied Fertilizer

There are several factors that impact a decision for fall applied fertilizer including resource allocation, fertilizer market price, and volatilization or leaching risks. On one hand, applying fertilizer in the fall allows for tank space and resources to be freed for spring planting which can be used for other agronomic chemicals and the market prices for fertilizers are lower in the fall than the spring. On the other hand, there is a larger risk of fertilizer loss due to volatilization and leaching since the fertilizer is sitting in the soil for several months before being used by the plant.

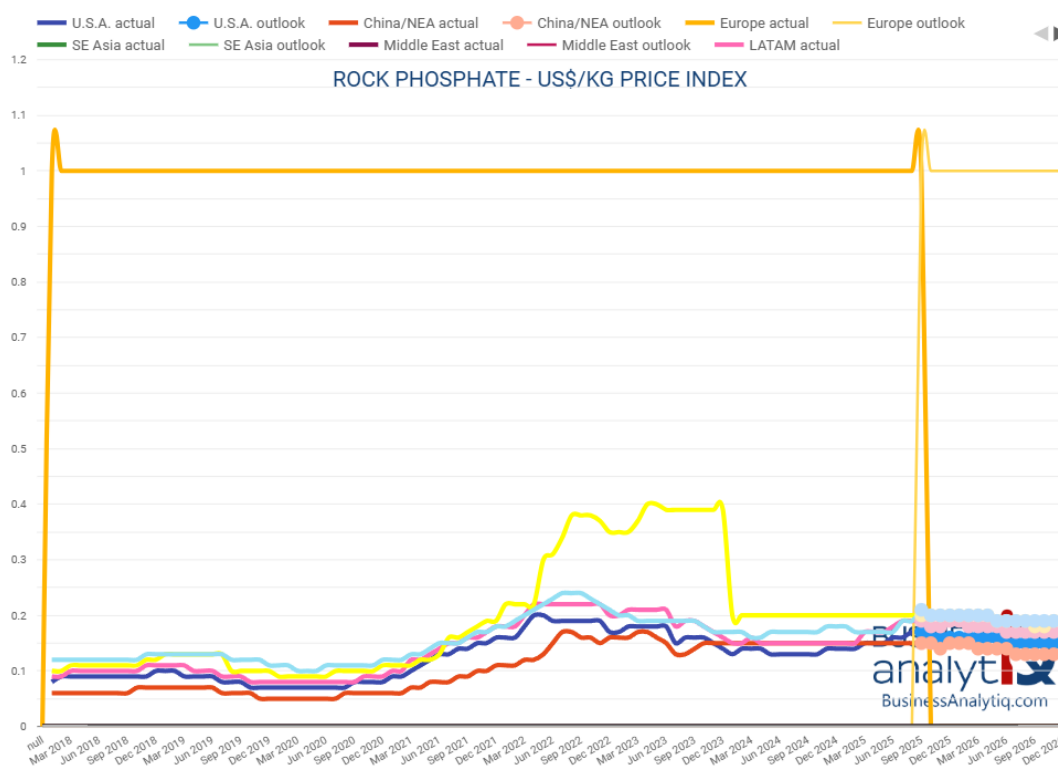
In the last few years, the spike in ammonia costs after COVID has led to a greater economic advantage of fall applied nitrogen than pre-COVID years. Although the market has dropped down to the lowest prices in 4 years, North America still has not returned to pre-COVID prices of \$0.28 USD/kg. Currently prices sit around \$0.45 USD/kg of ammonia at the end of September and are predicted to continue to drop leading into 2026 (Graph 1), but it is still a gamble whether it is better to wait until the spring of 2026 in hopes of prices dropping with the risk of an increase in prices with greater demand rather than taking the known price this fall. Potash has had the best market recovery since COVID with the average price in North America sitting at \$0.85 USD/kg at the end of September compared to a pre-COVID price of \$0.61 USD/kg (Graph 2). Potash is expected to continue to drop in price leading into 2026 with a 20% lower price increase compared to ammonia. Alternatively, phosphate has not been able to recover in price as well as ammonia has due to strained trading relations with China. On average, prices in North America sit around \$0.17 USD/kg at the end of September compared to a pre-COVID price of \$0.09 USD/kg (Graph 3). Comparatively, phosphate still has a 20% greater price increase compared to ammonia and 40% greater price increase compared to potash.



Graph 1: Ammonia Prices



Graph 2: Potassium Prices



Graph 3: Phosphorous Prices

If you decide it is economically advantageous to apply fertilizer in the fall, there are some agronomic considerations to keep in mind. Volatilization is the conversion of fertilizers from the soil available forms into a gaseous form via microbial activity which is released into atmosphere. Leaching or runoff occur when a nutrient is dissolved into water and moved away from the intended plant accessible area. Both of these are not only an environmental concern but, also, are a loss of product for the spring when the plant needs them. Of the three main fertilizers, nitrogen, phosphorous, and potassium, phosphorous is the best to apply in the fall as it is immobile in the soil, so there is little risk of loss due to volatilization or leaching through the winter compared to nitrogen or potassium. Nitrogen is the bulk of fertilizer applied and is most often what is chosen for fall application despite the risk of loss during the winter. To mitigate nitrogen loss, it is recommended to apply the nitrogen after soil temperatures have dropped below 5° C, as microbial activity will be the lowest, reducing risk of volatilization from enzymatic activity. A nitrogen stabilizer can be added to reduce the risk of volatilization and leaching by slowing the conversion process of nitrogen into a gas or dissolved into water. Potassium is the least recommended for fall application as it has a potential for leaching without as many stabilizer options as nitrogen and is the smallest portion of fertilizer needed in a growing season.

Fertilizer Market Price Index:

<https://businessanalytiq.com/index/>

Rewards and Risks of Fall Fertilization:

<https://activeagriscience.com/news/rewards-and-risks-of-fall-fertilization/>

<https://open.alberta.ca/dataset/6174c99d-1456-4c58-a63d-658d6a71b403/resource/6ea7befe-3ef6-47da-80d6-4b3dc87c271e/download/zz-2664167-2013-agri-facts-fall-applied-nitrogen-risks-benefits-revised-542-11-2013-11.pdf>



Annika Carroll

Agronomist, AIT

(780) 608-5628