



## **Farm Impact of Lower Duties on Phosphate Fertilizer**

The U.S. Department of Commerce announced November 2, 2023, week significantly lower duty rates, a reduction from 19.97% to 2.12% on phosphate fertilizers imported from Morocco. The National Corn Growers Association has been vocal opponent of the duties which not only added to fertilizer costs, but also negatively impacted diversity of supply for fertilizer that is critical to minimize disruptions and mitigate effects of adverse global events.

***Phosphorus is about 1/5 of the total fertilizer applied to corn.***

As an essential plant macronutrient for corn, phosphorus makes up about one-fifth of the total fertilizer applied to corn. The cost impact of that fertilizer is important to the farmer. In one study, a team of economists estimate the countervailing duties imposed on imports from Morocco increased U.S. phosphate fertilizer prices by approximately 34% over counterfactual levels based on data extending through February 2022<sup>i</sup>.

***Morocco has more than 2/3 of the world's known phosphate reserves.***

Most of the phosphate used in the U.S. is mined domestically as the U.S. holds the world's third largest phosphate rock-producing mine and accounted for 9.5% of the world phosphate mine production in 2022<sup>ii</sup>. However, imports have fulfilled 10% to 12% of annual consumption in recent years. Imports also contribute to diversity of supply. For example, triple superphosphate (TSP) is a phosphorus fertilizer that can be imported from Morocco but isn't offered by U.S. suppliers. Although the ammonium phosphate fertilizers are often used for their nutrient density, use of TSP when additional nitrogen is not needed can reduce nutrient run-off with positive impacts on water quality<sup>iii</sup>.

China is the leading source of global phosphate production, with 38.6% of world mine production in 2022, and Morocco second with 18.2%. Although Morocco isn't the global leader in annual mine production, 69% of the world's known phosphate reserves are located there. Morocco has played an important role in global phosphate supply in recent years, particularly given China's restrictions on phosphate exports. Imports of ammonium phosphate fertilizers from China dropped from 32% of global share in 2021 to 20% in 2022<sup>iv</sup>.

***Countervailing duties are an import tariff paid by the importer and passed to farmer.***

The countervailing duty is a punitive import tariff set by the importing country, the United States in this case. The importer bears the cost, and presumably passes it through to the agribusinesses and farmers who purchase the phosphate fertilizers. The amount of the tariff is based on the price of the phosphate.

The spot price of DAP at the U.S. Gulf ranged from below \$250 per ton in 2020 to above \$950 per ton in 2022. As an example of varying tariff cost, consider the price of DAP from Morocco when imported at the Port of New Orleans equal to the low end and the high end of that range. A 19.97% duty would cost the importer \$49.93

per ton if DAP is \$250 per ton, or \$189.72 per ton if DAP is \$950 per ton. In comparison, the duty rate of 2.12% would cost the importer \$5.30 per ton at the lower price example, or \$20.14 per ton at the higher price.

If the price of DAP from Morocco at the U.S. Gulf is \$530 per ton, near the average spot price for DAP in October 2023, the 2.12% duty rate would cost the importer \$11.24 per ton. Compared to the \$105.84 per ton cost to the importer at the higher 19.97% duty rate, the revised duty rate results in a tariff that is \$94.60 per ton lower.

Assuming the importer's tariff cost was being passed to the farmer, the difference in tariff given the revised duty rate would equate to a reduction in added cost of approximately \$7 per acre on DAP imported from Morocco, given the phosphate content of DAP and the nutrient replacement rate needed for the 181 bushel per acre national average corn yield USDA projects for 2024.

It's important to note that this is a very simplistic example calculating impact of the revision in the countervailing duty rate if passed through to the farmer on DAP imported from Morocco at a specific price and fertilizer rate. The actual impact on overall farm-level prices for phosphate fertilizer going forward is quite complex and dependent on numerous factors including the market price of the fertilizer, Morocco's exporter interest in the U.S. market, reactions in global phosphate production and supply flows, and future determination related to the duty rates.

The most recent news from the Department of Commerce (Commerce) is the result of the administrative review process that analyzed shipment rates for the period of 11/30/2020 – 12/31/2021. There is currently another administrative review pending that will cover 1/1/2022 – 12/31/2022. The Department of Commerce and the International Trade Commission will also determine new duty rates as directed by the Court of International Trade's remand referencing flawed data analyses. Most importantly, this announcement from Commerce regarding the administrative review is a significant move in the right direction and allows for improvement in the diversity of supply for fertilizer once the rate is finalized.

***Prepared by Krista Swanson, NCGA Lead Economist  
November 9, 2023***

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<sup>i</sup> Beeler, Ashley & Schaefer, K. & Sestak, Jacob & Conover, Glenn. (2023). Impacts of U.S. countervailing duties on phosphate fertilizers. American Journal of Agricultural Economics. 10.1111/ajae.12401.

<sup>ii</sup> U.S. Geological Survey, 2023, Mineral commodity summaries 2023: U.S. Geological Survey, 210 p., <https://doi.org/10.3133/mcs2023>.

<sup>iii</sup> <https://www.ilsoyadvisor.com/substituting-map-and-dap-with-tsp-maintains-soybean-yield-while-avoiding-n-loss/>

<sup>iv</sup> <https://www.profercy.com/2023/08/phosphates-dap-map-supply-movers-and-shakers-in-2023/>