

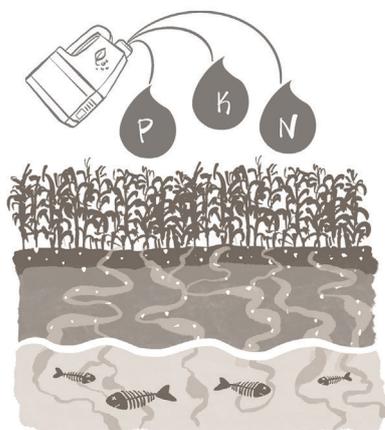
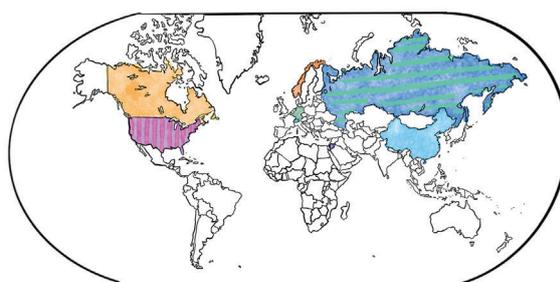
Synthetic fertilizers

- IN A NUTSHELL -



Synthetic Fertilizer companies sell inorganic plant nutrients manufactured via chemical processes. The three main macronutrients used in agriculture are nitrogen (N), phosphorous (P) and potassium (K). Nitrogen is the most frequently applied nutrient, mostly in the form of urea derived from ammonia produced from petrochemicals via an energy-intensive process. Next is phosphorus in the form of phosphates and then potassium via potash.

The global fertilizer industry is fragmented but has historically operated in export cartels organised by fertilizer type (sometimes government-sanctioned and involving state-owned companies). State ownership and/or investment in fertilizer production and trade is still common. Currently, fertilizer companies are expanding to include so-called specialty fertilizers (e.g., containing micro-nutrients and/or microbe-based formulations) and also digital agriculture.



RANK	COMPANY (HEADQUARTERS)	FERTILIZER REVENUE \$US MILLIONS
1	NUTRIEN (CANADA)	\$ 9,484
2	YARA (NORWAY)	\$ 9,423
3	THE MOSAIC COMPANY (USA)	\$ 8,014
4	CF INDUSTRIES HOLDINGS, INC. (USA)	\$ 4,124
5	IGL GROUP LTD. (ISRAEL)	\$ 3,769
6	PHOSAGRO (RUSSIA)	\$ 3,351
7	SINFERT (CHINA)	\$ 3,099
8	EUROCHEM (SWITZERLAND, NOMINALLY)	\$ 2,945
9	URALKALI (RUSSIA)	\$ 2,387
10	K+S GROUP (GERMANY)	\$ 1,940

SYNTHETIC FERTILIZER SALES OF THE LEADING COMPANIES, 2020

Highlights from the full report:

Concentration in the global fertilizer industry is difficult to quantify as it overlaps related industries such as mining, shipping and industrial chemical production. The industry also has a history of collusive behaviour. Fertilizer producers are central to their local economies and because they are often intertwined with national governments, geopolitics can play a significant role in trade. For example:

- The Chinese state-owned enterprise Sinochem controls Sinofert, China's biggest fertilizer company. China is one of the world's biggest fertilizer producers, with 31% global share of urea and 42% of Diammonium Phosphate (DAP) capacity.
- Morocco controls 72% of global phosphate reserves (including phosphate rock it mines from occupied Western Sahara) and owns OCP, a major phosphate fertilizer producer and Morocco's largest company.
- Norway owns more than 40% of Yara.
- Just four countries (Canada, Russia, Belarus, China) produce about 80% of the world's traded potash.
- The Eastern European fertilizer manufacturers (PhosAgro, Uralkali and EuroChem) are largely controlled by a cadre of oligarchs.

In 2021, prices of some synthetic fertilizers rose to their highest level since the food-price crisis of 2008. This hurt farmers and caused food prices to skyrocket again.

Chew on this

After decades of destroying soil health and polluting the atmosphere and waterways, fertilizer manufacturers are now devising ways to monetize the climate crisis and demonstrate their contributions to “clean and green” solutions. This means focusing on new fertilizer offerings – such as organic farming, microbe-based products, digital agriculture and alternative methods of ammonia production (e.g., “green” and “blue” ammonia, for nitrogen fertilizer manufacturing).

Digital-ag proponents claim that app-based tools can provide precise, field-specific (or even plant-specific) fertilizer-dosage recommendations that will reduce overall waste and protect the environment. The same tools give these companies access to massive amounts of data on profitable and unprofitable farmland, information about on-farm practices, as well as evidence of farmers' compliance (or noncompliance) with technology user agreements.

Using microbes to deliver nutrients and to protect from plant-pests is increasingly seen as a green alternative/supplement to synthetic fertilizers and agrochemicals. However, microbial products are largely unregulated and raise biosafety questions.