



Fertilizer: Diammonium Phosphate

What is Diammonium Phosphate?

Diammonium phosphate (DAP), known as “black” fertilizer in Afghanistan, is the world’s most widely used phosphorus (P) fertilizer. It is also a good source of nitrogen (N). DAP has a high nutrient content and is easy to handle and store.

DAP comes as a granule and usually contains 18-46-0 – meaning it has 18% N, 46% phosphorus pentoxide (P_2O_5), and no potassium oxide (K_2O).

Note: 46% phosphorus pentoxide (P_2O_5) = 20% P. So, a 50 kg bag of DAP contains 9 kg N and 23 Kg P_2O_5 (= 10 kg P).

DAP is generally available in local marketplaces.



DAP can vary in color from black to gray

Recommended Application Rates

Wheat. Recommended DAP rates (kg DAP/ha) (FAO, 2006)

	Target yield MT/ha	Rate (kg DAP/ha)*	
		Low fertility soils	Medium fertility soils
Irrigated wheat	6 to 7	326 to 391	217 to 271 kg/ha
Rainfed wheat	1 to 2	163 kg/ha	108 kg/ha

* Profitability of recommended rates needs to be assessed.

Grapes. Recommended DAP rates (FAO, 2006)

	Time of application	Vine age (years)	Rate kg DAP/vine
Irrigated grapes	Bud break (early/late March)	1 to 4	0.1
		5 to 10+	0.2 to 0.7
Rainfed grapes	Before bud-break (late February/ early March)	1 to 4	0.05 kg
		5 to 10+	0.1 to 0.35 kg

Application rate is about 50% of that for irrigated grapes.

For more information about other crops see Near East Fertilizer Manual, FAO, 2006

How to apply

Most, if not all DAP is applied prior to planting. In Afghanistan, DAP is commonly broadcast on the surface and then tilled to incorporate with the soil. However, band applied DAP (i.e., DAP applied in a line just below or near to the seed line) will give the best results and maximize recovery of P by crops. Avoid placing high concentrations of DAP too close to germinating seeds, as it will damage the seed.

Storage

Store DAP undercover in a dry area. DAP absorbs moisture from the air and tends to lump together in storage.

Prepared by Nick Madden and Mark Bell, 2012.

Reference: Near East Fertilizer Manual, FAO, 2006; Efficiency of Soil and Fertilizer Phosphorus Use, FAO, 2008

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