

parts per million (ppm) = 1 milligram per liter; 1 milligram per kilogram or 1 milliliter per liter

gallons/100liters (g/hL)	1	12.5	20	25	30	40	60	80	100	120	
lbs/1000gal	0.083	1.043	1.669	2.086	2.504	3.338	5.007	6.676	8.345	10.00	
mg/liter (ppm)	10	125	200	250	300	400	600	800	1000	1200	
grams/20L (g/5.3 gal)	0.2	2.5	4	5	6	8	12	16	20	24	
Nutrient	YAN	ppm (or milligrams per liter) of available nitrogen									
DAP	21.2%	2.1	26.5	42.4	53.0	63.6	84.8	127.3	169.7	212.1	254.5
Fermaid K™	10%	1.0	12.5	20.0	25.0	30.0	40.0	60.0	80.0	100.0	120.0
Fermaid O™	4%	0.40	5.0	8.0	10.0	12.0	16.0	24.0	32.0	40.0	48.0
Go-Ferm™	3.33%	0.33	4.2	6.7	8.3	10.0	13.3	20.0	26.7	33.3	40.0

NOTE: red = over (US) TTB regulated levels of thiamin in wine (but not distillate)

Example one:

Rehydrating 10 grams of yeast with 12 grams of Go-Ferm, then pitching into a 20L wash with 8 grams of Fermaid K, and 20 grams of DAP would provide at least: 20 + 40 + 212 = 272 ppm available N even with plain sugar. Organic nitrogen sources could substitute for some of the DAP, such as brewers yeast, nutritional yeast, yeast hulls, and/or grain meals.

Example two:

Rehydrate 5 grams of yeast with 6 grams of Go-Ferm, then add to a 1 liter starter with 1/2 cup of sugar and 1 gram of Fermaid K (or 2 grams of Fermaid O). Pitch into a 19 L wash with 7 grams of Fermaid K and 20 grams of DAP. [262 ppm available N]

Notes:

The bare minimum level of fermentable nitrogen needed for fermentation is 140 mg/liter; an optimal range is considered to be between 225 and 275 mg/liter of fermentable nitrogen.

The rules (US TTB) allow an addition of 10 lbs of DAP per 1000 gallons of distillate wash, but in addition, the full amount of vender's recommendation of proprietary mix (Fermax, Fermaid, etc.) is also allowed.

Fermax™ - contains diammonium phosphate, dipotassium phosphate, magnesium sulfate, autolyzed yeast.

Fermaid™ - Also called Fermaid K™. Contains a variety of compounds such as amino acids, sterols, yeast hulls, and vitamins; also contains a limited concentration of fermentable nitrogen (25g/HL = 25 mg/L fermentable N)

Yeast Hulls - The cell walls of the hulls absorb autotoxic yeast byproducts that could inhibit alcoholic and malolactic fermentations. You would use yeast hulls by themselves if you encountered a stuck or sluggish alcoholic (normal) or malolactic fermentation.

To avoid a stressful temperature peak, gradual nutrient incorporation until 1/3 sugar depletion is preferable.

Rehydration nutrients such as Go-Ferm are intended to give the yeast a strong start before introduction to the wash where wild yeast and bacteria can compete for nutrients (make wash when yeast is ready to pitch), and where chelating compounds can interfere with nutrient uptake. It is less of an advantage in pure sugar washes, but still helps.

Do not add pure DAP to a rehydration solution since high levels of inorganic nitrogen can be toxic to yeast.

Also avoid adding DAP to the wash after half sugar depletion since only organic nitrogen from amino acids is assimilable by the yeast at that stage due to high levels of alcohol, and excess nitrogen is associated with higher H₂S formation.

Don't use distilled water for rehydration, it is much preferable to use un-chlorinated tap water or spring water to assist in supplying trace minerals.