There is More Nitrogen in the Air We Breathe than in Fertilizer

The companion article to this one is "There is more Oxygen in Dirt than in the Air We Breathe". You can find it at http://www.colloidaltraceminerals.net/oxides.htm. Fertilizer by definition is heavy on NPK (Nitrates, Phosphates, Potash). The basic elements, Nitrogen, Phosphorus and Potassium may be unusable by plants unless chelated, or appearing in colloids, or otherwise converted by bacteria to become bio-available. Particle size is another factor when talking "absorption rate". Likewise pH, surrounding moisture and the presence of Carbon and other elements may be critical in making one or more of these fertilizer ingredients do their job. (Refer also to page 12 of the article found at: http://www.montmorillonite.info/What%20is%20soil%20parts%20AB.pdf)

In conjunction with photosynthesis denitrifying bacteria develop nitrates naturally in two ways for plants.

1) Certain bacteria are able to convert free Nitrogen from the air directly into nitrates in the soil;

2) Other kinds of bacteria--in two to three steps--are able to help animal waste containing urea to be broken down. First, they are able to change certain fecal material into ammonia. Then other bacteria may convert it, or even dead and decaying animals themselves, into nitrites. Finally the nitrites are converted to nitrates by pro-biotic life.

So, when we say there is more Nitrogen in the air than in fertilizer, this is true for two different reasons. First, actual fertilizer needs to be in the nitrate form rather than elemental Nitrogen. Second, there is definitely more pure Nitrogen in the air than there is by volume even within the nitrates in soil or fertilizer. The chart below will help to illustrate the latter.

Major Gases in the Earth's Atmosphere

http://scifun.chem.wisc.edu/CHEMWEEK/Airgases/airgases.html

Element		Percentage of air
Nitrogen		78.00 %
Oxygen		21.00 %
Argon		.90 %
Carbon Dioxide		.03 %
Water Vapor		Varies daily
Hydrogen		Trace
Ozone		Trace
Carbon Monoxide		Trace
Helium		Trace
Neon		Trace
Krypton		Trace
Xenon		Trace

You probably never thought of yourself breathing more of the stuff that makes up smelly feces, dead fish and fertilizer than what plants eat, did you? Actually the disgusting matter also contains a substantial amount of Carbon which is a major component of living things (Refer to: http://www.montmorillonite.info/Element%20Table.htm). Carbon presence in the right proportion dictates the effectiveness of the Carbon/Nitrogen cycle.

Commercial Fertilizers usually come packaged with a label that is supposed to disclose the NPK and other major ingredients. By clicking on the following link ++++ you can see how inconsistently the different chemical fertilizer companies and those professing to be organic fertilizers comply with furnishing this bit of useful information. Likewise, there is generally not a very conscientious attempt at listing the "micronutrient 14" (including Magnesium, Calcium, Sulfur, Iron, Zinc, Copper, Manganese, Molybdenum, Boron, Silicon, Carbon, Oxygen, Nickel and Cobalt), or even "big 8" elements plants are known to need.

The particular link cited above is the compilation of a survey conducted in a few hours one day visiting a half dozen of the major nurseries and retail chains carrying gardening supplies in my geographic area.

RESULTS: Of the manufacturers who dared call one or more of their products an actual fertilizer, the one with the largest amount of Nitrogen in any form did not exceed 29% by volume. (Curiously this was even 1% less than the same manufacturer's herbicide product). **Air has a measured 78% Nitrogen**! In contrast the lowest amount of Nitrogen included in the mix is presumably with those products clearly listed as Topsoils, Potting Soils, Starter Soils and Garden Soils whose respective manufacturers did not bother to list Nitrogen content at all. Similarly, with the makers of mulches (with one exception who stated his product contained 2% Nitrogen) and composts, Sphangum Moss and Soil amendments, no attempt was made to list any minerals whatsoever. The biggest surprise was that organic fertilizers and steer manure packages likewise failed to inform of their contents by elements.

So, if there is an insignificant amount of Nitrogen in even Steer Manure, clearly there must be more Nitrogen in the air we breathe than in fertilizer.

CONCLUSION: If fertilizers are low on Nitrogen, consider that they must be pathetically devoid of minerals and trace elements. This is another reason to buy a separate remineralizer for your planting and gardening needs. ***PANÁK-ITE*** (www.montmorillonite.biz) is not a fertilizer, as it is low indeed in NPK, but it enjoys a rich bouquet of trace elements including all of the foregoing. Even if you have a sufficient amount of N, P, K, Ca, Mg, S and Fe, the trace elements in ***PANÁK-ITE*** with their catalytic properties, will make these other elements perform their functions properly.