



RARE-EARTH INFORMATION CENTER INSIGHT

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Rare Earth Fertilizer

In the past few years we have been hearing claims by Chinese scientists and technical experts how great the rare earths are in improving crop yields. Most yield increases range from 5 to 10% (for example: wheat, rice, peanuts, beets, tobacco, watermelon, and soybeans) and a few 10 to 20% (sugarcane and cabbage). Several colorful brochures, which Madison Avenue firms would have been proud to claim as their own, have been produced by several Chinese organizations. Unfortunately, little, if any, information has been published in major peer reviewed scientific or technical journals and so it is difficult to assess the Chinese results. Some information has been published in Chinese journals and a few papers have appeared in English in unreviewed conference proceedings, which contain little detail.

The rare earth fertilizer is called "nong-le". It is a complex product containing soluble, mixed rare earths, usually in the form of the nitrate, although the chloride would suffice. The other (propriety) ingredients in the nong-le are not known. The rare earths cannot replace the essential nutrients (nitrogen, phosphorus and potassium) - they must be used in conjunction with these. Timing the application is important and the most beneficial effects are found if the rare earths are added in the early growth stages. The usual dosage is 450 to 750 g/hectare (45 to 75 mg/m²). An excess of rare earths is harmful.

One may wonder what effects rare earths have on humans when the rare earths are added to food products. The Chinese have made extensive studies on rats, mice and other animals. Extrapolation to human beings allowed them to conclude that there is no adverse toxicological effects. Again, this information has not been published in peer reviewed journals, so it is difficult to assess the reliability of the studies. Since they have begun extensive use of nong-le on various crops (see below), they must be confident that there is no danger - they certainly would not knowingly poison their own countrymen.

Since the rare earths are widely dispersed in the soils in China, there must be cities or regions, in which, over the centuries, the people have eaten foods with high rare earth contents, while in other regions or cities the diets contain foods with low rare earth concentrations. Upon questioning by the editor, the Chinese claim to have made demographic studies and find no significant differences in the death rates and causes of illnesses

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