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NO_x is Best Compound to Reduce CO₂

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Corresponding author: Shoichiro Ozaki, The Institute of Physical and Chemical Research, 2-1 Hirosawa, Wakoshi Saitama, Japan, Tel: +810467670991; E-mail: ozaki-0991@jcom.zaq.ne.jp**Received Date:** March 08, 2017; **Accepted Date:** April 01, 2017; **Published Date:** April 10, 2017**Copyright:** © 2017 Ozaki S. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.**Citation:** Ozaki S. NO_x is Best Compound to Reduce CO₂. Eur Exp Biol. 2017, 7:12.

Abstract

The earth is warmed up by the burning of fossil fuel. If we can compensate the generation of CO₂ and heat by CO₂ assimilation, global warming can be protected. To promote CO₂ assimilation, supply of nutrient N and P is most important. Nature has a system to provide NO_x when materials are burned or by thunder. These NO_x is critically important for plant growth. When fossil fuel burned, much NO_x is produced. If we use all produced NO_x, we can protect global warming. Large amount of N and P is contained in drainage. The drainage should be released as it is. Deep sea water contain much nutrient N and P. Shallow sea water contain very little nutrient N and P. Agitation of deep sea water with shallow sea water increase the plankton growth. These methods are effective methods to protect global warming and to increase food and wood productions.

Keywords: NO_x; Carbon dioxide; Thunder; Carbon dioxide assimilation; Global warming

Introduction

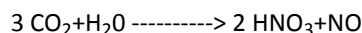
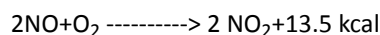
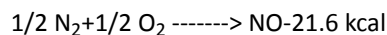
The earth is warmed by the fossil fuel burning releasing CO₂ and heat. The plant is growing by CO₂ assimilation absorbing CO₂ producing carbohydrate and O₂. If we can compensate the generation of CO₂ and heat with the absorption of CO₂ and heat by CO₂ assimilation, global warming can be protected [1-5].

Plankton photosynthesis is studied by many investigators [6-65]. It is estimated that between 50%-85% of the world's oxygen is produced via plankton CO₂ assimilation [12,13]. The growth of plankton is dependent on nutrient N and P availability. Supply of nutrients is important factor for the plankton productivity [22]. When fossil fuel burned, much NO_x is produced. If we use produced NO_x as it is, we can fix CO₂ and protect global warming.

In this paper I will describe the methods to protect global warming by increase of CO₂ fixing by the increase of nutrients N and P.

No_x is a Gift from Nature

Nature has systems to change N₂ to nutrient nitrogen. By thunder, the high temperature at fire place for cooking, warming up of room by burning of wood, by forest fire, by forest burning, by bonfire, and also burning of fossil fuel, following reactions proceed.



NO_x is a mixture of 90% NO and 10% NO₂. NO_x is dissolved in rain and give nutrient nitric acid and promote the growth of plant and plankton.

The earth was boon and plant appeared and plant eat CO₂, H₂O and nutrient N, P and plant is burned then NO_x is produced to recover lost plant. When no burning material present, like sea district, thunder storms makes NO_x. NO_x is a gift from nature. We should not go against nature. We should use NO_x as it is. In 2010 fossil 1.4 × 10¹⁰ billion tons was burned and CO₂ 4.4 × 10¹⁰ billion tons and NO_x 2.4 × 10⁹ billion tons are produced. If we use all NO_x for the fixing of CO₂, we can fix 2.5 × 25 × 10⁹ = 5 × 10¹⁰ billion tons CO₂. As C/N ratio [66-67] of plant is around 5/1-50/1 (average 25/1).

NO_x is hated as pollution gas causing illness. Many governments set up very strict law to eliminate all NO_x in burned gas and forced to eliminate NO_x using ammonia. I wish to insist that NO_x elimination should be stopped because toxicity of NO_x is not so serious compared with significant merit of NO_x. NO_x is essential for plant to grow and produce food. NO_x is essential for the promotion of CO₂ assimilation and essential for the production of foods for the promotion of health and long life for the protection of global warming.

Toxicity of NO_x

No report as to the serious sick and dead person caused by NO_x is reported.

NO_x is released at no person district such as sea side far from house. NO_x do not give serious damage to persons. NO_x is essential for the growth of plant and essential for the production

of food and essential for all living biology. Therefore NO_x elimination procedure and NO_x elimination law should be eliminated.

Thunder Produce NO_x , Yellowtail, Crab and Delicious Rice

Thunder produces NO_x from N_2 and O_2 [68-84]. About 4 million thunders in one day and about 30×10^6 t NO_x is produced by thunder in one year and about 20-80% of NO_x is produced by thunder in the world.

At Japan sea coastal area, many snow falls occur. This district is highest snow fall district in the world and snow pile up to 2-3 m. At this district, thunder happen very often with snow. Ishikawa prefecture 42.4 day, Fukui prefecture 35.0 day, Niigata prefecture 34.8 day, Toyama prefecture 32.2 day, Akita prefecture 21.4 day in a year are top 5 prefectures in 47 prefectures in Japan. Thunder at winter time is different from thunder at summer time. Winter thunder run from earth to cloud and has several hundred times stronger energy than summer time thunder and happening day and night very frequently producing much NO_x . At the near sea, Gulf Toyama (Toyamawan) and surrounding sea are rich in nutrient N from thunder produced NO_x and filled with plankton producing many Yellowtail (Buri) and Crab (Kani), therefore thunder is called as Buriokoshi (yellowtail producer).

These 5 prefectures produce very much delicious rice since thousand years when no synthetic fertilizer is produced. There are proverbs, many thunder year produce good harvest, one thunder lightning gives one inch growth of rice. Thunder lightning is written as Inazuma (Rice wife). Kaminari (thunder) in Japanese character is written Ame (rain) on the top Ta (field). Most snow falling (3 meter) district Minami Uonuma is famous for the production of most delicious rice Minamiuonuma koshihikari.

On the contrary, at Seto inland sea (sea between Shikoku and Chugoku in Japan) district, especially middle part of Seto inland sea between Okayama and Kagawa Prefecture, thunder is very rare, once in 5 years. Therefore no NO_x is produced by thunder at this district. Fish industry of this district was destroyed almost completely since the supply of NO_x was stopped by NO_x elimination law. These facts indicate that NO_x is playing very important role for the protection of global warming and production of foods.

Methods to Reduce CO_2

Paris agreement asks us to reduce CO_2 . To reduce CO_2 , we can do by reducing the emission of CO_2 and by increase of CO_2 fixing.

NO_x elimination should be stopped

Large amount of NO_x is produced when large amount of fossil fuel is burned. The amount of NO_x produced is around 2.5×10^9 tons in whole world. To eliminate NO_x 2.5×10^9 tons, equimolar ammonia 11.3 billion ton is used. To make 11.3 billion tons

ammonia, 2 billion tons hydrogen gas is used. To make 2 billion tons hydrogen, 6.4 billion tons butane is used. As a result, 17.6 billion tons CO_2 is released. If NO_x elimination is stopped, 17.6 billion tons CO_2 release can be stopped. And $17.6 \times 25=440$ billion tons CO_2 can be fixed.

Stopping of drainage treatment

Drainage contains nutrient N and P. To treat drainage, huge electricity is used. To make this electricity, 0.60 million fossil fuel are used in Japan. If we stop the drainage treatment, we can save the release of CO_2 one million tons. Each house need not to pay drainage treatment fee 20\$ per month. Ocean, field and wood dumping of drainage are encouraged.

By stopping of drainage treatment and NO_x elimination at burned gas, and by releasing of NO_x 2 million tons and nutrient P 0.5 million tons, CO_2 $2 \times 25=50$ million tons can be fixed and fish 20 million tons can be produced in Japan. By insufficient supply of nutrient N caused by NO_x elimination law, fish industry suffered critical damage at Kuroshio (poor nutrient N, P) running sea especially at Seto inland sea district where no thunder and no supply of NO_x by thunder. Tuna (maguro), Bonite (katsuo), Sardin (iwashi), Bream (tai), Mackerel (saba), Octopus (tako), Sea eel (anago), Oyster (kaki) decreased to 20%. Sea weed (nori) decreased to 0%. Many fisherman lost job [66-68]. Fish price increased five times and fish became much expensive than meat now. We Japanese can alive longest (Men 80.50 (third), women 86.63 (top)). The author studied the reason why Japanese can alive longest and found that Japanese eat fish as main protein source. Fish contain hyaluronic acid, glucosamine and chondroitin which are precursors of anti-aging reagents [85-90]. We Japanese may lose long life record from the fact that fish production was reduced remarkably by NO_x elimination law.

Stopping of high temperature garbage incinerator

In Japan, special law about garbage incinerator was set up in 2002 by the reason NO_x is not eliminated completely at lower temperature than 800° . Operation of this incinerator requires excessive fuel and produce excessive CO_2 . If we burn garbage at lower temperature, we can save 0.3 million tons fuel and we can save the release of CO_2 0.6 million tons. And we can produce NO_x 0.3 million tons and we can fix CO_2 $0.3 \times 25=7.5$ million tons. Each house need not pay garbage burning fee 20\$ per month.

Extension of rice plantation area

In Japan rice production area was restricted to keep high price. No planted rice field is 1 million hector. If we use full field, CO_2 14 million tons can be fixed. And if we plant wheat at winter time at the same field as rice at summer time, CO_2 30 million tons can be fixed.

Agitation of deep sea water and shallow sea water

70% of earth is covered by sea. 70% of CO_2 assimilation is carried out at sea. Sea contains enough N and P. Plankton grow at cold sea because cold sea is rich in N, P. North Atlantic ocean and north Pacific ocean are plankton rich seas and produce

much fish. Kuroshio current (running south east of Japan) is clean and contain very small amount of nutrient N and P, and produce small amount of plankton and fish. Oyashio current (running north of Japan) produce much plankton and much fish.

Current running west sides of United State, Canada and Chili are rich in nutrient N and P and rich in plankton and fish. Concentration of N and P on the surface of sea at 100 m south of Muroto is 1 µg/l and 0.3 µg/l respectively. Concentration of 1000 m deep sea is N-3.3 µg/l, P-2.9 µg/l. Therefore agitation of deep sea water with shallow sea water is very important method to get high N, P concentration. We must study to stir deep sea water with shallow sea water by wind or tide. Plankton production and Kaki (Oyster) production is already got success at Kumejima, Okinawa [91].

Summary

CO₂ assimilation is most important for the protection of global warming and for the production of food and wood. NO_x is plying most important role for the promotion of CO₂ assimilation. NO_x elimination should be stopped. Nutrient N and P in drainage must be used. If we use produced NO_x as it is, we can fix CO₂ and protect global warming.

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