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Promotion of Plant Growth by NO_x Is Best Method to Reduce CO_2 and to Protect Global Warming

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Abstract

NO_x is produced about 1/25 of produced CO_2 when something is burned. This NO_x is fertilizer. And promotor of plant growth. But officials of many country dislike NO_x as pollution substance and eliminating with ammonia. Then CO_2 assimilation is retarded. Food production is retarded. And global warming is progressing. I am insisting that N_{O_x} should be released to air as it is NP in drainage is good promotor of CO_2 assimilation. NP in drainage should be used for the promotion of CO_2 assimilation of plant and plankton.

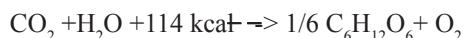
Keywords: Global Warming; NO_x Elimination; Plant Growth; Waste Water Purification; NO_x

Introduction

Promotion of CO_2 assimilation

The earth is warmed by the fossil fuel burning releasing CO_2 and heat. The plant is growing by CO_2 assimilation absorbing CO_2 absorbing sun energy and producing carbohydrate and oxygen. If we can compensate the generation of CO_2 and heat with the absorption of CO_2 and heat by CO_2 assimilation, global warming can be protected [1-21].

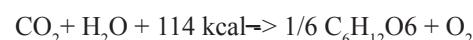
CO_2 .Assimilation



Burning Most carbon oxide produced by burning is used for CO_2 assimilation. But 140 billion tone CO_2 is remaining to increase 2ppm each year The increase of CO_2 is the cause of global warming. We must increase the fixing of 140 billion tone CO_2 by increasing nutrient nitrogen and phosphorous. Plankton photosynthesis are studied by many investigators [22-29]. These studies indicate that CO_2 assimilation is playing very important role for the protection of global warming. Supply of nutrients is important for the promotion of CO_2 assimilation. When fossil burned, NO_x is produced about 1/25 of produced CO_2 . This NO_x is major source

of nutrient N. If we use produced NO_x for the promotion of CO_2 assimilation. Protection of global warming can be accomplished. NO_x is natural nitrogen fertilizer and accelerate CO_2 assimilation. CO_2 is increasing 2ppm annually. The increase of CO_2 is a cause of global warming. Therefore, acceleration of CO_2 fix is important subject. Most of CO_2 turn to carbohydrate and oxygen by CO_2 .

Assimilation



CO_2 is released by burning of substance and respiration of animal. Most of CO_2 is fixed by CO_2 assimilation. Recycle of CO_2 is carried out in such way. Total amount of CO_2 on earth is 28300 billion tone. Concentration is 400 ppm. CO_2 2ppm is increasing each year. Amount of increasing CO_2 is $28300 \times 2/400 = 142$ billion tone. Amount of CO_2 evolved in 1 year

- 1360 billion tone CO_2 is released. When 140 billion fuel is burned Fossil $\text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2 + 114 \text{ kcal}$ CH_4 16 g 44g Oil CH_2 14g Coal CH 13g
- 50 billion tone CO_2 is released by burning of wood.
- 100 billion tone CO_2 is released by animal
- Population of the world is 76 billion.

One person releases 0.5 tone CO_2 . Total release by persons is 38 billion tone. Cow, whales and Birds release 62 billion tone CO_2 . Total release by animal is 100 billion tone. Total release of

the world is $360 + 50 + 100 = 510$ billion tone. CO_2 fixed by CO_2 assimilation can be calculated by subtracting increased CO_2 amount 142 billion tone from produced CO_2 510 billion tone $510 - 142 = 368$ billion tone. If we can fix 510 billion tone CO_2 , we can protect global warning. But actually only 383 billion tone CO_2 is fixed, we must fix 142 billion tone CO_2 by promotion of CO_2 assimilation by NO_x . Each country must fix their responsible amount of CO_2 . Responsible amount can be calculated by the equation $\text{CO}_2(\text{res}) = \text{CO}_2(\text{emission}) \times 142/360(0.393)$.

Most emitted CO_2 is fixed by CO_2 assimilation. CO_2 increase is calculated based by CO_2 emission minus fixable CO_2 . CO_2 increase of 10 countries is shown at (Table 1). 10 K tone CO_2 can be fixed at 1 km² wood and 10 k tone CO_2 is fixed at 1 km² cultivated land. Then we can calculate fixable CO_2 by area Km² multiply 10 k tone.

Country	$\text{CO}_2 \text{ em}$ billion t	$\text{CO}_2 \text{ res}$ bill t	NO_x bill t	Area km ²	Fixable CO_2 kt	CO_2 increase bill l
World	360	142	14.4			142
China	106.4	41.9	4.25	1.0×10^7	1×10^{10}	5
USA	51	20	2	9.5×10^6	9.5×10^9	0
India	24.6	9.69	1	3.2×10^6	3.2×10^9	0
Russia	19.6	7.72	0.63	3.2×10^6	3.2×10^9	0
Japan	12.5	4.92	0.5	3.8×10^5	3.3×10^8	9.2
Germany	7.8	2.95	0.31	3.5×10^5	3.5×10^8	4.3
Iran	6.3	2.48	0.25	1.6×10^6	1.6×10^6	6.3
Canada	5.6	2.24	0.22	1.0×10^8	1×10^{10}	0
Indonesia	5	1.99	0.2	1.9×10^6	1.9×10^6	3.7
U. K	4	1.58	0.16	2.4×10^4	2.4×10^8	1.6
Turkey	4	1.58	0.16	7.8×10^5	7.8×10^5	3.2
Italy	3.5	1.38	0.14	2.0×10^5	3.0×10^8	0.5
France	3.3	1.37	0.13	6.4×10^5	8.4×10^8	0

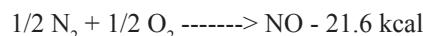
Table 1: $\text{CO}_2 \text{ em}$ (CO_2 emission), $\text{NO}_x \text{ con}$ (NO_x concentration in exhaust gas), electricity, price, fish, CO_2 plankton, GDP growth rate of 8 countries.

Six countries listed at the table look like able to fix emitted CO_2 by CO_2 assimilation because area is wide enough. Japan, Germany, Iran, United Kingdom Turkey and Italy cannot fix CO_2 at his country. Because areas are narrow. Japan emitted 1.2×10^9 k tone CO_2 in 2015. Japan has area 3.8×10^5 . Fixable CO_2 is 3.3×10^8 k tones. Japan increasing 9.2 billion tone CO_2 . Japan must decrease 9.2 billion tone CO_2 . United Kingdom and Italy are being increasing CO_2 . These 3 country are surrounded by sea. These country can decrease CO_2 by Plankton CO_2 assimilation at sea. Total CO_2 emission of the world is 3.6×10^{10} kt. We must decrease CO_2 emission by the promotion of plankton CO_2 assimilation by using NO_x .

NO_x Is Promotor of Plant Growth. NO_x Elimination Should Be Stopped

NO_x is produced as a byproduct of CO_2 , when something

is burned. Nature set up the amount of NO_x to produce same ratio plant to be produced. $\text{NO}_x/\text{CO}_2 = 1/25$ as composition of plant N/C = 1/25. When 25 tone CO_2 is produced 1 tone NO_x is produced. As C/N ratio of plant is around 5/1-50/1 (average 25/1). [30]. Nature has systems to change N_2 to nutrient nitrogen. By thunder [31-32], 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



Burning of 1kg dry wood produce $1 \times 44/30 = 1.47$ kg CO_2 and $1.47 \times 1/25 = 59$ g NO_x . 1 lighting of thunder produce 7 kg NO_x . About 4 million thunder in one day and about 3×10^7 t NO_x is produced in one year. NO_x is a mixture of 90% NO and 10% NO_2 . 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 CO_2 , H_2O 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 make NO_x . We should not against nature. We should use NO_x as it is. In 2015 fossil 140 billion tone was burned and CO_2 360 billion tone and NO_x 14.4 billion tone are produced. If we use all NO_x for the fixing of CO_2 , we can $14.4 \times 25 \times 108 = 360$ tone CO_2 . NO_x elimination should be stopped (Table 2). NO_x is hated as pollution gas causing illness. Many governments of developed countries like USA, Japan, Germany, UK, France and Italy set up very strict law to eliminate NO_x in burned gas and forced to eliminate NO_x using ammonia. Amount of NO_x is huge amount 14.4 billion tone. To eliminate NO_x , huge amount of ammonia is necessary and huge amount of fossil is used. These governments put emphasis on tox-

icity of NO_x than the utility of NO_x .



To destroy one fertilizer by other fertilizer is tremendous loss of natural resources. Elimination of NO_x is promoting global warming by three ways. One is retardation of CO_2 fix. Retardation of plant, plankton growth. Two is increase of CO_2 by using much butane. Three is consumption of precious fuel for the production of ammonia. Amount of NO_x is so big. China produce 0.9 billion tone urea as fertilizer. China producing 4.25 billion tone NO_x . Japan producing 2 million tone nitrogen fertilizer and 50 million tone NO_x .

I wish to propose plan that if NO_x elimination is stopped and if waste water purification is stopped, global warming can be stopped.

Country	CO_2 em bill t	NO_x con g/ kWh	El price c/kWh	Fish mill t	CO_2 fplankton bill t	GDP growth rate [33].
China	106.4	1.6	1.5-4.5	79.38	19.8	6.92
India	24.5	1.6		10.11	2,0	7.1
Canada	5.5	1.3	8.1	1.05	0.25	1.4
UK	4	1.3	15.4	0.91	0.002	1.8
Germany	7.7	1	32	0.29	0.07	1.85
USA	51.7	0.5	12	6.05	0.5	1.48
Italy	3.5	0.5	28	0.34	0.008	0.86
Japan	12.5	0.1	24	4.6	0.11	1.01

Table 2: CO_2 em, NO_x concentration, electricity price, fish, CO_2 fplankton, GDP of 8 countries.

The country does not do NO_x elimination. 1. Need not fossil to eliminate NO_x . 2. Can have enough NO_x and can promote CO_2 assimilation. 3 Electricity price is low. 4. Can produce much fish and grain. 5. Can get high GDP growth rate. China 6.92%, India 7.10%. 6. becoming rich. The country does NO_x elimination show high electricity price, poor fish production, poor CO_2 assimilation, low GDP growth rate. USA 1.48 %, Germany 1.85%, UK 1.8%, Japan 1.0%, Italy 0.88%. Becoming poor. These facts indicate NO_x elimination give bad effect on electricity price, fish production, GDP, CO_2 assimilation, protection on global warming and economy. NO_x elimination should be stopped.

Conclusion

Promotion of CO_2 assimilation is essential for the protection of global warming. Increase of nutrient nitrogen and phosphorous is essential for the protection of global warming. Stopping of NO_x elimination and stopping of waste water purification are essential for the increase of NP and for the protection of global warming.

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