



國立中興大學
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&



Global Warming Problem and “the NSP Solutions”

1. Organic Farming and Antibiotic-free Poultry
2. Low-Carbon Process and CO₂-related Polymers



Global Warming?

CO_2

CH_4

N_2O

- 1) Carbon dioxide (CO_2) -- burning of fossil fuel and emission from industry
- 2) Methane (CH_4) -- from livestock (animal manure); agricultural waste and composts of plant matter, landfills, swamps, rice paddies... Methane is 25-30 times potent than carbon dioxide. USA insisted that methane reduction has to be the main task for tackling global warming.
- 3) Nitrous oxide (N_2O)-- released from bacteria in soil, due to the use of nitrogen-rich fertilizers, soil tilling and cultivation, livestock waste management. Nitrous oxide has 298 times the global warming potential of carbon dioxide.

French 4/1000 Initiative – CO2 in Soils is crucial for global warming

1. The “4/1000 Initiative: Soils for Food Security and Climate” aims to ensure that agriculture plays its part in combating climate change. CO2 reservoir : Ocean 38 (billon ton); Soil 2.5; atmosphere 0.75 ; plant 0.65 .
2. French (2015 COP21): 4 Per 1000 Initiative: Soils for Food Security and Climate) · A 4/1000 annual growth rate of the soil carbon stocks crucial to improve soil fertility and agricultural production and to contribute to achieving the long-term objective of limiting the temperature increase to +1.5/2.0°C
3. The solutions: using animal manure and composts, minimizing chemical fertilizers, and promoting Organic way of farming

(NSP can help to increase CO2 reservoir in soil by reducing soil acidity and promoting organic farming technology)

NSP can help!

“Food Safety, Food Security and Environmental-Friendly Farming—agriculture and poultry”

2020 EU’s “Farm to Fork Strategy”, the European Green Deal, focuses on the solutions to Climate Change and Food Security, for a fair, healthy and environmentally-friendly food system.



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EU’s European Green Deal
「Farm to Fork Strategy」

- ✓ Cutting the use of pesticides on farms by 50%,
- ✓ Reducing antimicrobials used for farmed animals and aquaculture
- ✓ Reducing fertilizer usage by 20%
- ✓ Shifting 25% of its farmland to organic farming
- ✓ Reversing the loss of biodiversity
- ✓ Mitigating the climate change
- ✓ Increasing animal welfare
- ✓ Ensuring food security, nutrition and public health



In Taiwan Nontoxic NSP is already applied for rice farm
–spraying by drone (UAV) for controlling the diseases in rice crop

- For agriculture In Hwa-lein, Taiwan
- Complying the trend of automation and AI Automation, with high **efficiency** of applying NSP in open field
- Significant results have been achieved in **disease control** and **yield enhancement**

NSP can help!

NSP clays in organic farming increasing the CO₂ reservoir in soil and then reducing the concentration in atmosphere

--- NSP friendly join the equilibrium of the Nature ---

1. NSP in agriculture: substituting chemical pesticides, promoting crop harvest, reducing fertilizer uses ...
2. NSP in soil: neutralizing acidic pH, adsorbing organic toxins and pollutants, balancing bacterial colony equilibrium...



3. NSP as Si-fertilizer and increasing bioavailability...
4. NSP in livestock: substituting chemical drugs and antibiotics, adsorbing bacteria and virus (reducing diseases and virus infections)...

NSP, not a chemical, suiting for organic farming, soil/water environment and "2050 zero emission" target



THANK YOU

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