

## Acidification of the soil by air pollution and the relation of withering of trees.

Teiko Omori<sup>1\*</sup>, YOSIIKE Yuzo<sup>2</sup>, OKAMURA Sinobu<sup>3</sup>, IWASAKI Masato<sup>4</sup>

<sup>1</sup>Department of Science, Toho University(former), <sup>2</sup>Department of Science, Toho University(former), <sup>3</sup>Department of Science, Toho University, <sup>4</sup>A Comprehensive School affiliated with Ashikaga Institute of Technology

Trees wither by sulfuric acid of air pollutant. Sulfuric acid generates by combustion of fossil fuel. Sulfuric acid moves by wind and adheres to trees. Adhered sulfuric acid is added to the soil of root with rain. The soil dissolves the metal of ingredient by sulfuric acid. Dissolved metal ion is absorbed into water in trees. The absorbed metal ion combines with phosphoric acid in the trees. As the metal phosphoric acid compound which combined has very low solubility, the work as phosphoric acid becomes impossible. Trees become the same phenomenon as the shortage of phosphoric acid and decline. As for the tree which weakened, creation of the defense ingredient to an insect becomes impossible. As for a pine, the generation of resin decreases. Tannin combines with metal and detoxifies a Japanese oak. As a result, trees become the food and residence of an insect. Insects increase so much and trees wither. The main cause of withering is by the acidification of soil. Withering is saved by neutralizing the acidified soil. As for the method of neutralization, it is optimal to use charcoal. Trees include Na, K, Ca, Mg and P. Those remain as carbonate or oxide into charcoal and if rain is added to charcoal, it will become an alkaline solution and it neutralizes acid soil. The remaining elements are contained at the rate which the tree needs. As a result, they become an ideal nutrient. Charcoal becomes a moisture absorbent and the breeding place of soil bacteria. As a result, the soil is activated and can prevent withering of trees.

Keywords: Air pollution, Withering., Charcoal., Metal phosphate., Tannic acid iron, Acidification of soil.