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THE NEMATOCIDAL POWER OF AMMONIA

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It is shown that the nematocidal power of ammonia, results from its capacity to generate high osmotic pressures, even in very low concentrations. The technique, which has been developed, allows calculation, based on the osmotic pressures and solutions, concentrated at the exact point, when physical effects of osmotic pressure, becomes lethal to nematodes. It further determines in the same way, the fungicidal power of ammonia. It analyzes the physical and chemical behaviour of ammonia, in soil solutions, and correlates the effects of osmotic pressure, with biological equilibrium. It is shown that ammonia solutions, from 0,25% concentration levels, with about 3 kg/cm² of Osmotic Pressure, have effective nematocidal power, reaching maximum efficiency, with about 13 kg/cm², at concentrations of no more than one per cent, of ammonia solutions.

It is shown that VILLOT (1890) was right, when he stated: "*ammonia has a nematocidal effect by itself, and it does not work by its alkalinity*". BAUNACKE (1922), KORAB (1927), ENO, BLUE & GOOD (1955) worked with ammoniacal solutions (the first two) and with anhydrous ammonia (the last) but none of them reached any conclusions, which could explain the reason of the nematocidal effect of ammonia solutions, nor did they obtain results, enabling them to rationalize its use. The speaker analyzes these essays on function of the osmotic pressure, and establishes, that there is a real correlation between the lethal effects, shown by those investigators, and the osmotic pressure levels, considered effectively nematocidal. He cites "compost", as a typical case of control, due to the effects of the osmotic pressure of its water contained solutions, and recalls that "purin", of French farmers, is an ammoniacal solution, to whose nematocidal effect, France owes the stability of her agricultural output for centuries.-

To summarize: The nematocidal power of ammonia, implies a change of mental attitude, in connection with the search for chemicals, to control fungi and nematodes in soil. The physico-chemistry of biological processes, is the new concept, introduced as a nematodes control element. On this new standpoint of view, traditional techniques, such as "purin" and "compost", are included, or are just simple facts, like forest "humus", where nature, attains the perfect biological equilibrium, reaching a natural control of nematodes in soils.-

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