

THE BIO—DYNAMIC VERSUS THE MINERAL CONCEPT OF AVAILABILITY

— PHOSPHATES —

PHOSPHATES ARE PRECIPITATED IN MEASURABLE AMOUNTS WITH SNOW AND WINTER RAIN

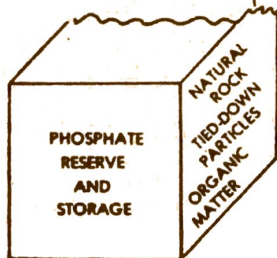


THE SITUATION IN ORGANIC "LIVING" SOILS:

PHOSPHATE COMPOUNDS ARE DISPERSED IN THE SOIL IN LIVING AND DEAD ORGANIC MATTER. ORGANIC AND INORGANIC ACIDS CAN RENDER THEM AVAILABLE. THE MORE DIGESTED ORGANIC MATTER (HUMUS) THAT IS PRESENT, THE GREATER THE AVAILABILITY FROM PARTICLE TO PARTICLE, TO SOIL SOLUTION, TO ROOT AREA: THERE EXISTS

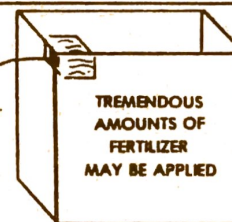
"A DYNAMIC EQUILIBRIUM"
BECAUSE OF IT, PHOSPHATE PARTICLES DO NOT MIGRATE MUCH, BUT UNDER UNFAVORABLE CONDITIONS THEY CAN BE PRECIPITATED AND LAY, "IN POSITION", BUT INERT.

PHOSPHATES ARE ALSO CONTAINED IN MANURES AND COMPOSTS



"THE NATURAL BALANCE"
DECIDES HOW MUCH IS AVAILABLE OR TIED DOWN

ONLY 2-10% REMAIN AVAILABLE. THE REST BECOMES UNAVAILABLE AND IS TIED DOWN. WITH CONTINUED UNFAVORABLE CONDITIONS IT WILL REMAIN TIED DOWN AND WILL BE EVT. LOST



THE SITUATION IN MINERALIZED "DEAD" SOILS:

THE SOIL BALANCE DECIDES HOW MUCH WILL REMAIN AVAILABLE AND NOT THE AMOUNT OF APPLICATION. THE MORE THAT HAS BEEN APPLIED, THE BETTER THE CHANCES OF TYING DOWN RESULT.

ACID SOILS ALLOW BETTER AVAILABILITY
ALKALINE SOILS FAVOR UNAVAILABILITY

IN EXCESSIVELY PHOSPHATE FERTILIZED SOILS, LARGE DEPOSITS OF PHOSPHATE HAVE BEEN BUILDING UP, WHICH CAN BE UTILIZED WITH THE "BIOLOGICAL ACTIVATION" OF THE SOIL

IF THE BIOLOGICAL ACTIVATION IS NOT DONE AND THE SOIL BALANCE IS NOT MAINTAINED, THEN PLANTS CAN ONLY LIVE FROM THE MINERAL COMPOUNDS CONTAINED IN THE SOIL SOLUTION, AND THE MINERAL FERTILIZER THEORY APPLIES.

WITH BIOLOGICAL ACTIVATION AND MAINTENANCE OF SOIL BALANCE, NATURAL RESOURCES ARE UTILIZED AND ONLY THE ACTUAL REMOVAL BY WAY OF CROPS, NEEDS TO BE COVERED.

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— NITROGEN —

WARMTH

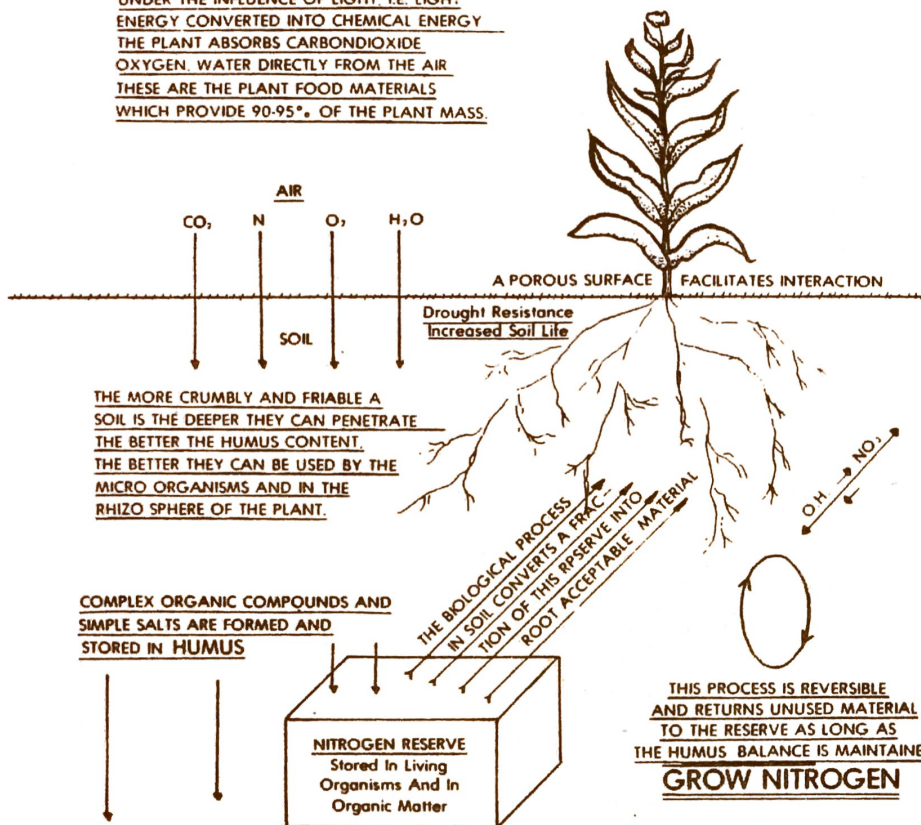
THE ENERGIES PLUS "LIFE"

LIGHT

AIR — WATER

THE MATERIALS: OXYGEN, HYDROGEN,
NITROGEN, CARBONDIOXIDE. THE BODY BUILDERS. WATER IS THE MEDIATOR

UNDER THE INFLUENCE OF LIGHT, I.E. LIGHT ENERGY CONVERTED INTO CHEMICAL ENERGY THE PLANT ABSORBS CARBONDIOXIDE OXYGEN, WATER DIRECTLY FROM THE AIR THESE ARE THE PLANT FOOD MATERIALS WHICH PROVIDE 90-95% OF THE PLANT MASS.

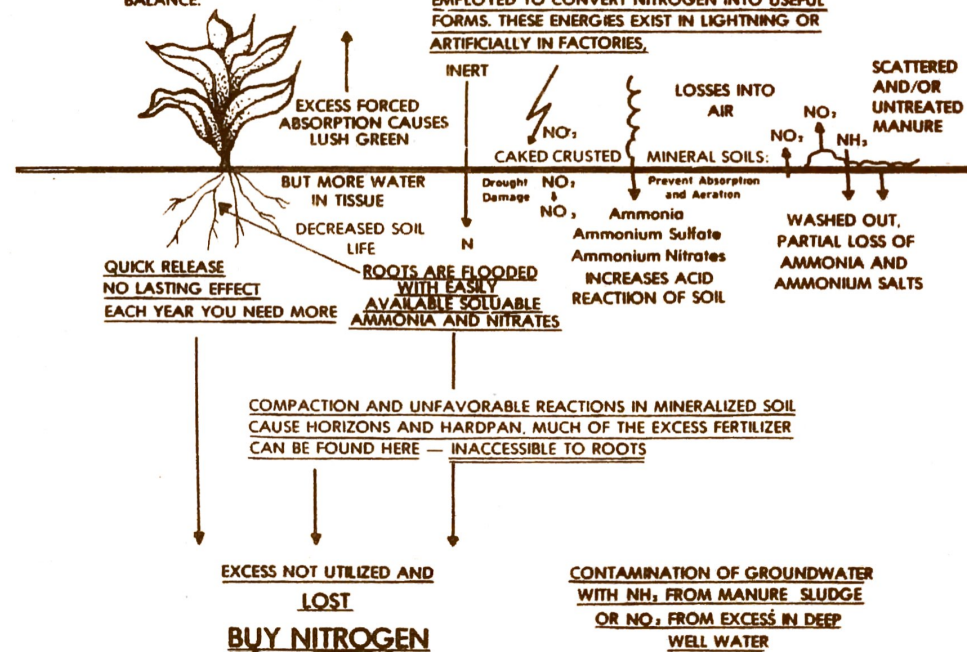


AT 2% ORGANIC MATTER — THE ORGANIC NITROGEN RESERVE CAN BE 2000 LBS/ACRE
AT 3% ORGANIC MATTER — THE ORGANIC NITROGEN RESERVE CAN BE 3000 LBS/ACRE
AT 4% ORGANIC MATTER — THE ORGANIC NITROGEN RESERVE CAN BE 4000 LBS/ACRE
BUT IN BIODYNAMIC SOILS WE HAVE OFTEN FOUND TWO AND THREE TIMES AS MUCH. THIS IS POSSIBLE BECAUSE OF THE ACTIVATION OF THE LIVING PROCESS.

BASIC IDEA: FEED THE SOIL - LIFE
AND SOIL WILL FEED THE PLANT.

EXCESS NO_3 IN PLANT TISSUE TOXIC TO ANIMALS. SOMETIMES MORE PROTEIN (%), BUT LESS NUTRITIOUS VALUE BECAUSE OF UNFAVORABLE AMINO ACID BALANCE.

NITROGEN IN THE AIR IS INERT AND HAS TO PASS THROUGH THE SOIL AND NITROGEN-FIXING ORGANISMS IN THE SOIL TO BE ACTIVATED AND CONVERTED INTO ACCEPTABLE MATERIAL.
OR: TREMENDOUS ELECTRICAL ENERGIES ARE EMPLOYED TO CONVERT NITROGEN INTO USEFUL FORMS. THESE ENERGIES EXIST IN LIGHTNING OR ARTIFICIALLY IN FACTORIES.



THESE UNFAVORABLE CONDITIONS PREVAIL BELOW
1.5% ORGANIC MATTER IN MINERALIZED SOILS

VIRGIN SOIL: 4 To 6% Organic Matter
TODAY'S SOIL: U.S. Average 1.5%

BASIC IDEA: FEED THE PLANT DIRECTLY AND
USE THE SOIL AS A VEHICLE ONLY TO CARRY
NUTRIENT SOLUTION,

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—POT ASH—

LIGHT

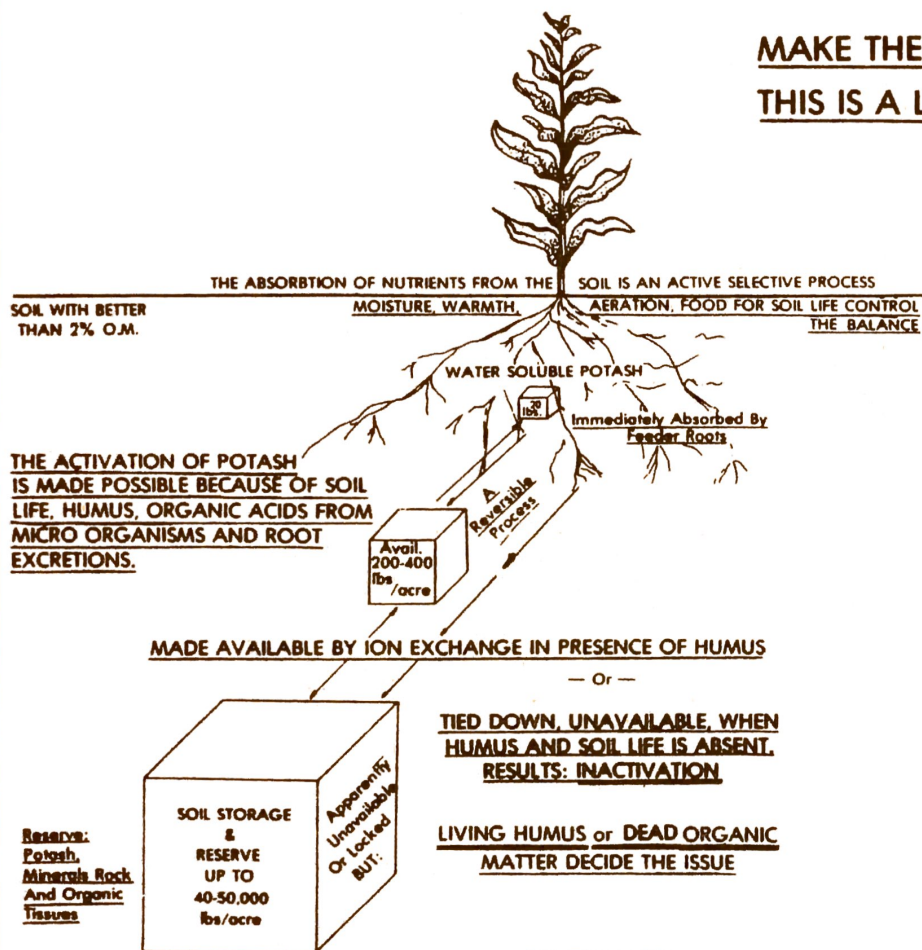
WARMTH

AIR

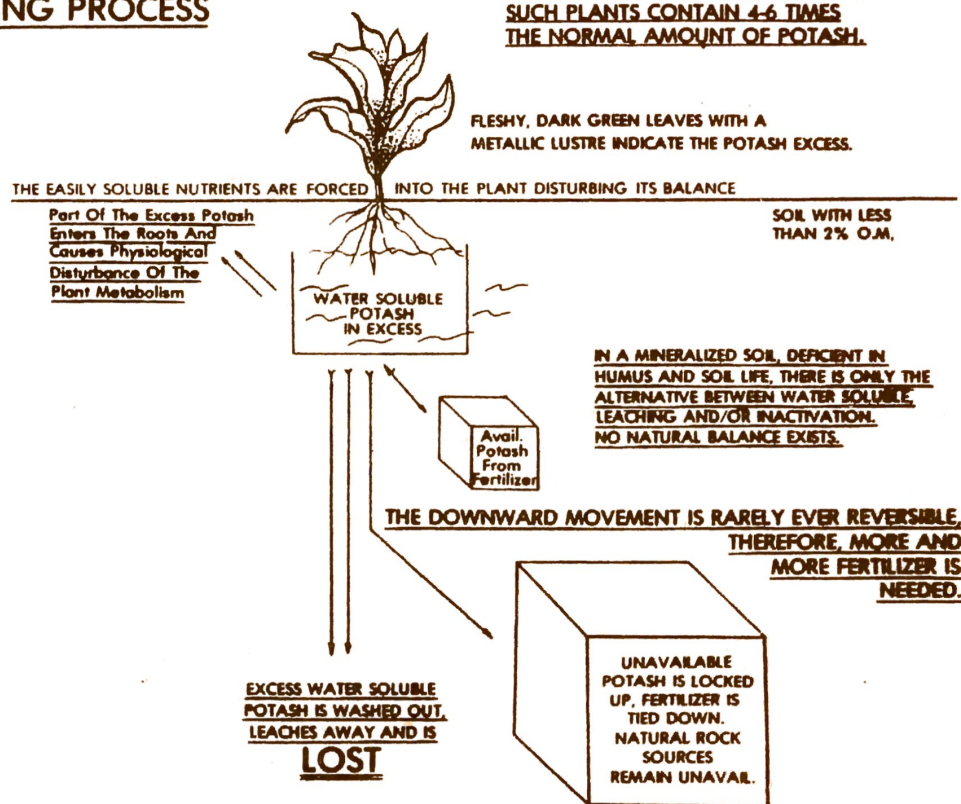
WATER

MAKE THE PLANTS GROW
THIS IS A LIVING PROCESS

THE EXCESS CONSUMPTION OF WATER SOLUBLE POTASH PRODUCES TOXIC EFFECTS IN ANIMALS FEEDING ON SUCH PLANTS. MILK FROM COWS THUS FED DOES NOT MAKE CHEESE! SUCH PLANTS CONTAIN 4-6 TIMES THE NORMAL AMOUNT OF POTASH.



A NATURAL DYNAMIC BALANCE IS ESTABLISHED — MOVING UPWARDS OR DOWNWARDS — ACCORDING TO CONDITIONS. POTASH IS ALWAYS "READY" IN A STAND-BY POSITION
NO WASTE — NO EXCESS



EVEN RAW MANURE INCREASES LEACHING
THE ONLY PROTECTION: TO BUILD UP SOIL WITH COMPOSTED, B.D. ACTIVATED ORGANIC MATTER.