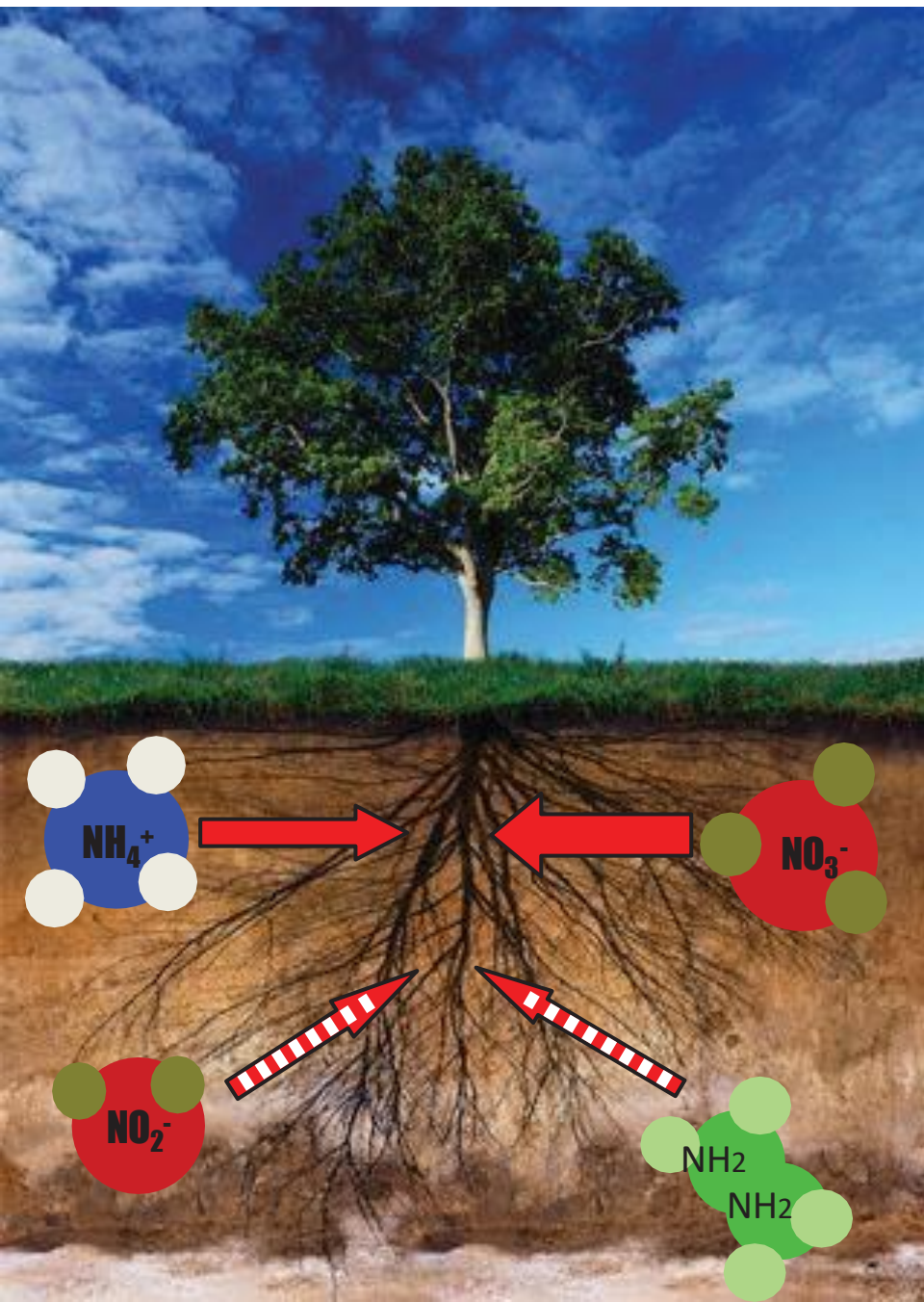




Technology – NovaTec®

(3,4-dimethylpyrazole phosphate - DMPP Nitrification Inhibitor)



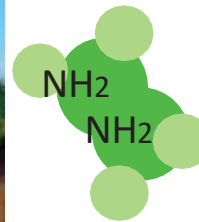
Soil nitrogen could be present in any of the following forms:



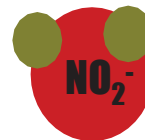
Nitrate → Easily leachable and volatile. Represents more than 90% of N content in the soil.



Ammonium → Hardly leachable. Represents less than 5% of N content in the soil.



Urea → Easily leachable and volatile. Some plants are able to absorb it only in small amounts.



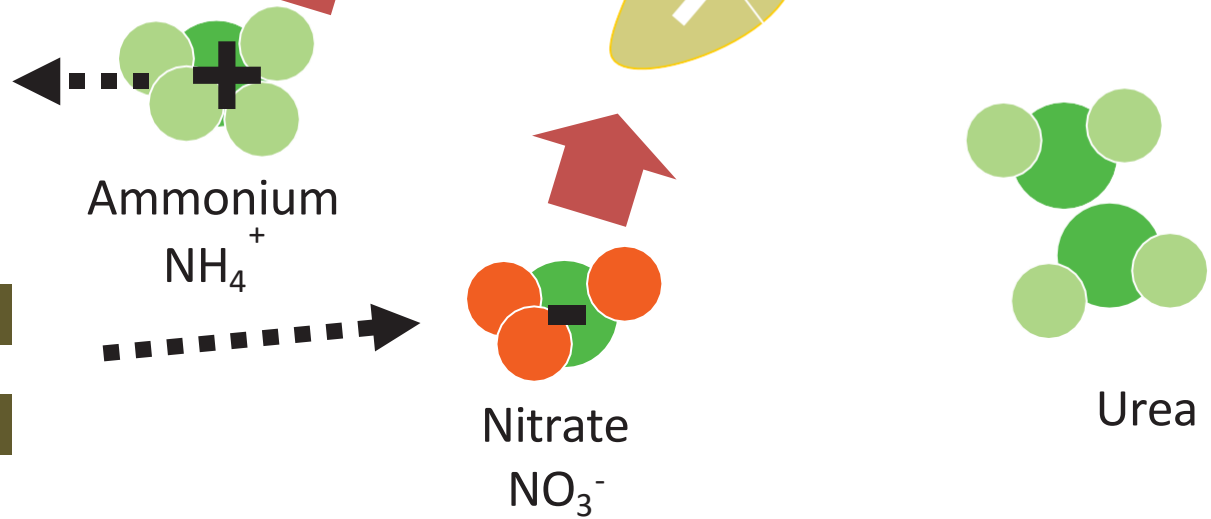
Nitrite → Easily leachable. Barely present in soils (Is rapidly transformed into Nitrate by soil bacteria).

Ammonium (NH_4^+) and Nitrate (NO_3^-) are the main forms of N uptake by plant



Soil

Root





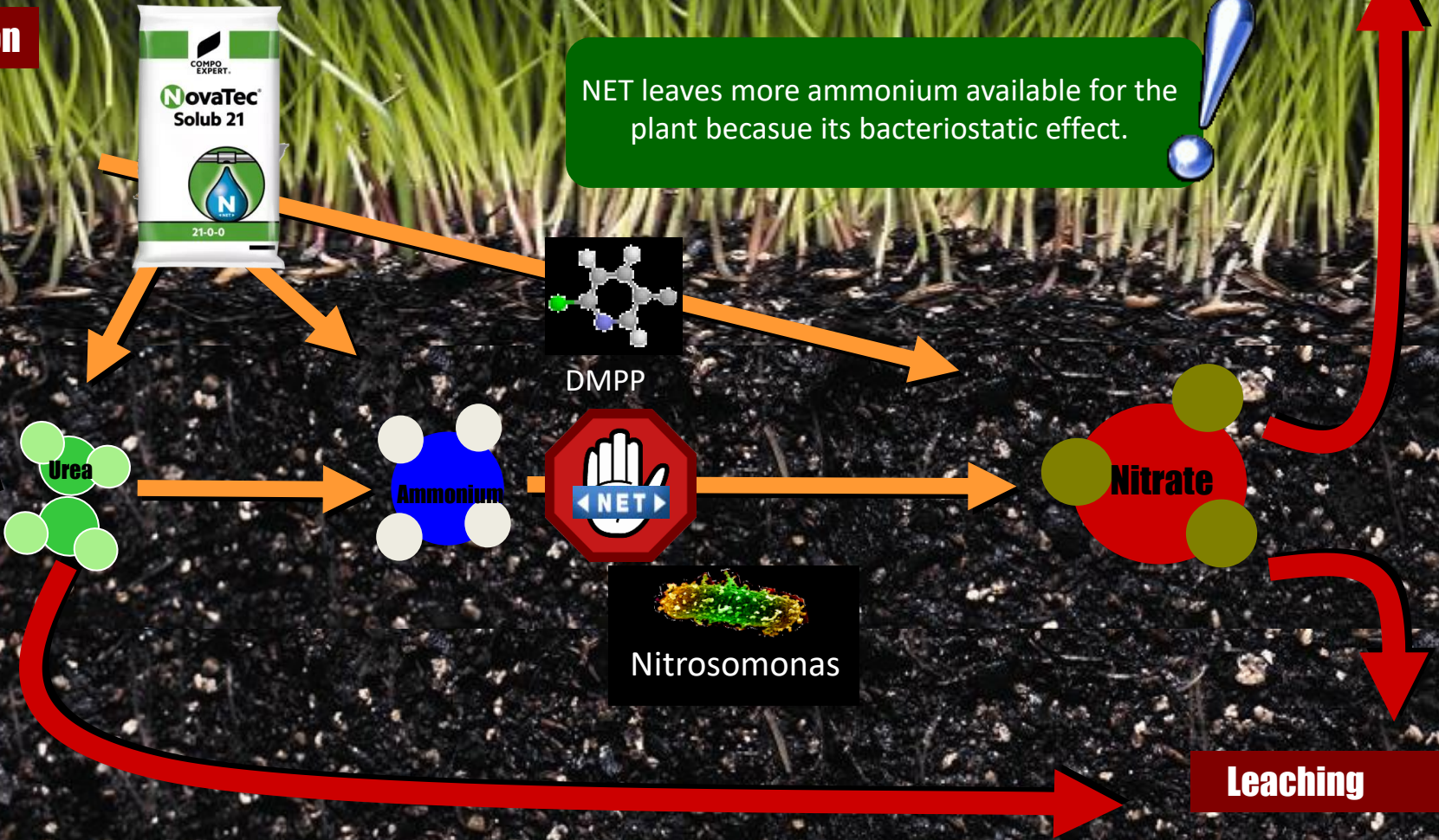
NET technology is not a CRF or SRF, but
Decreases leaching and volatilization
of Nitrogen.

What happens in soils?
In soil ammonium is less mobile
than nitrate or urea. The risk of N
losses by leaching can be 100 to
1000 times lower than nitrate.

NET leaves more ammonium available for the
plant because of its bacteriostatic effect.

Volatilization

Volatilization



DMPP action: The specific inhibition of the enzyme ammonium monooxygenase in nitrosifying bacteria

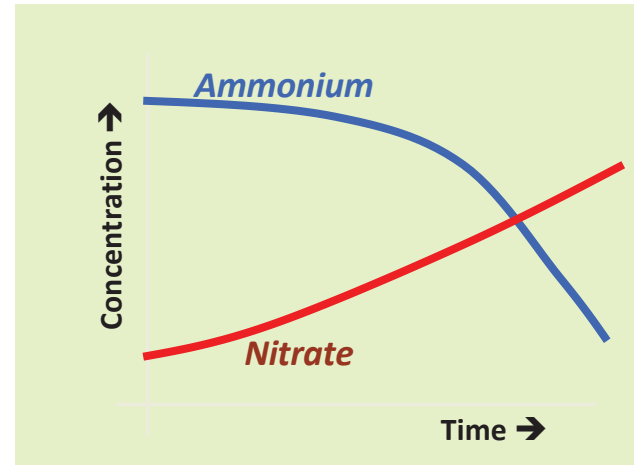
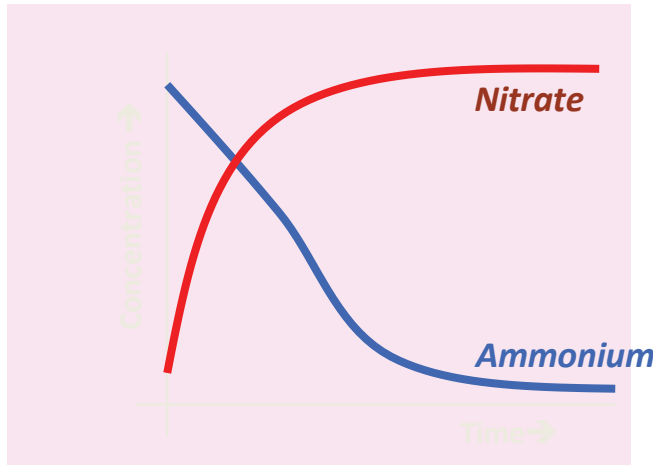


Fertilizers



Without Inhibitor

With Inhibitor



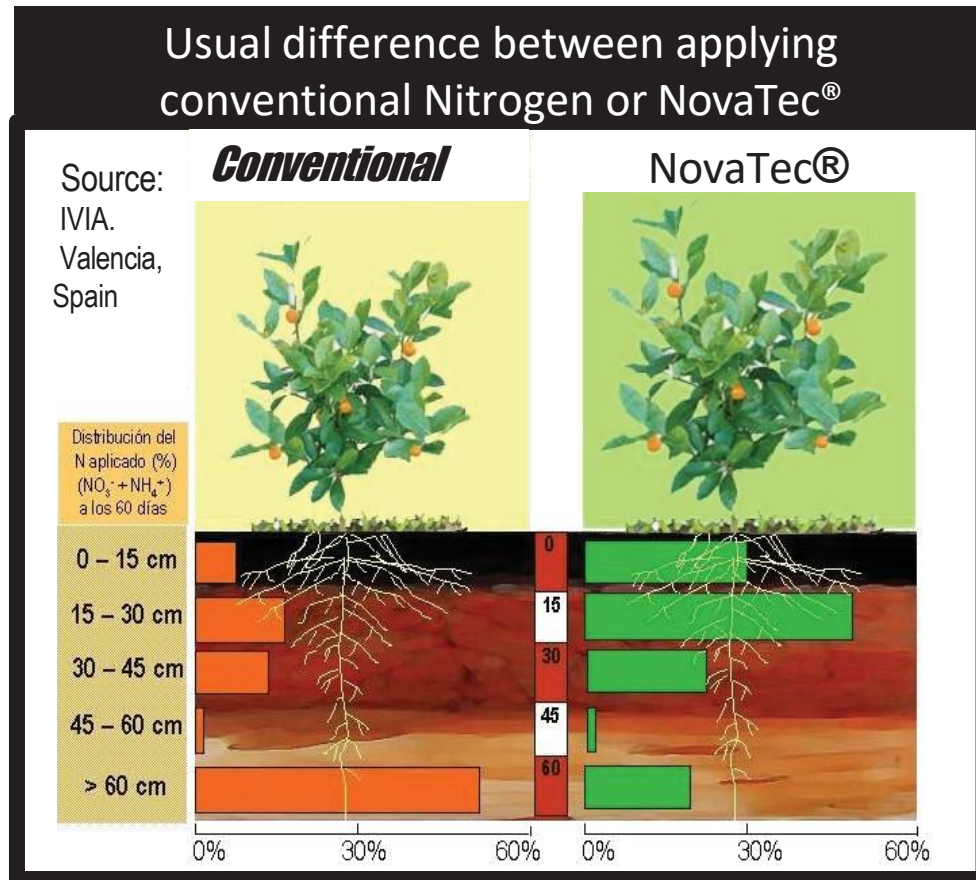
Influence of Temperature of NH₄ nitrification.

Model calculation based in BASF studies

[% nitrification of applied NH₄]

Soil T°	ASN			ASN + DMPP		
	w. 2	w. 4	w. 8	w. 2	w. 4	w. 8
5 °C	6	12	25	0	0	0.5
10 °C	14	27	55	7	14	28
15 °C	51	100	100	14	27	54
20 °C	100	100	100	20	40	81

Nitrogen remains where roots are actively up taking nutrients




PROTEINS

AMINOACIDS

AMMONIUM

NITRITE

NITRATE

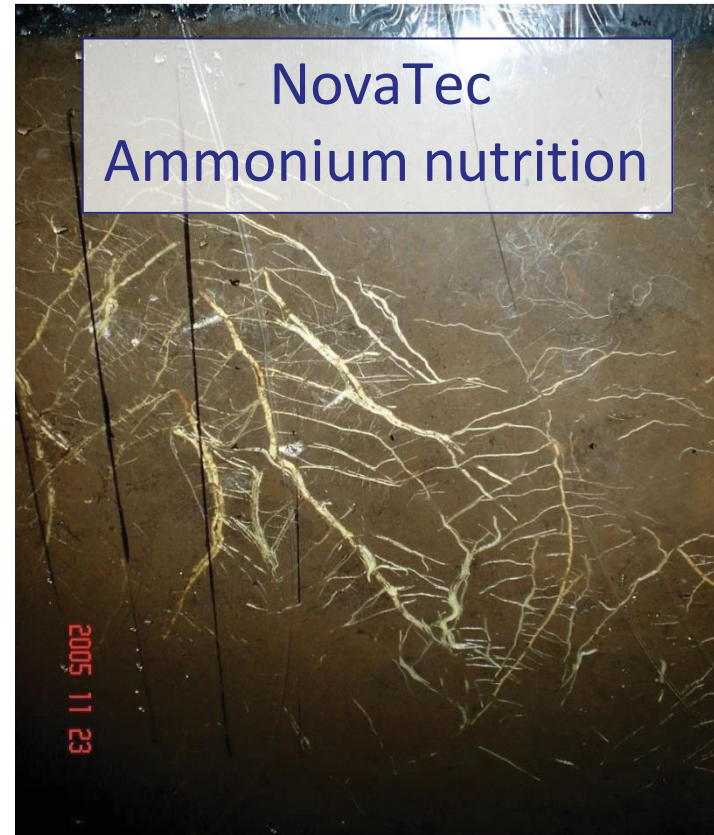
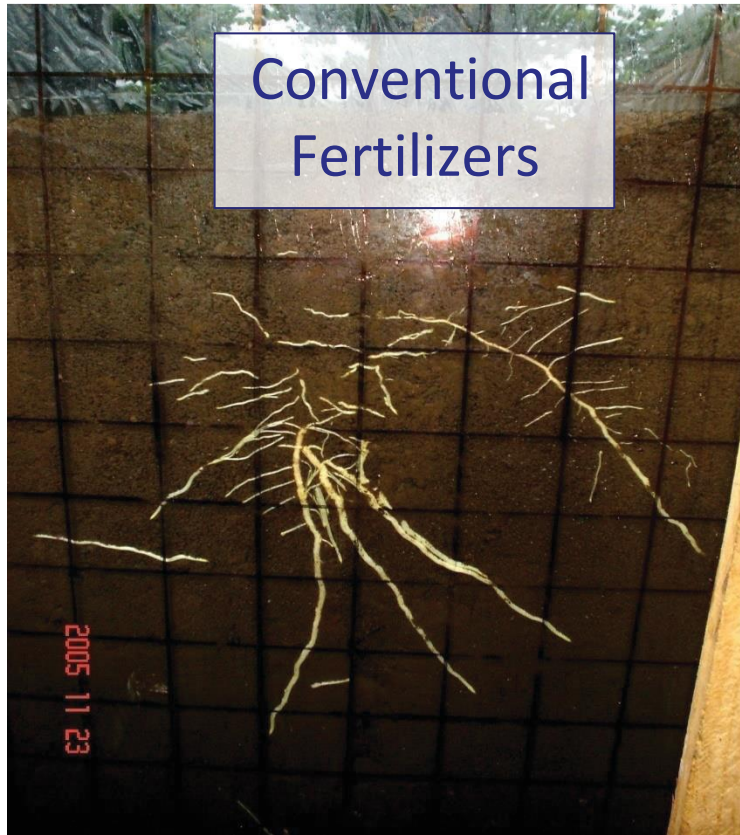
Application of N in the form of Ammonium is a significant energy saving for the plant. 



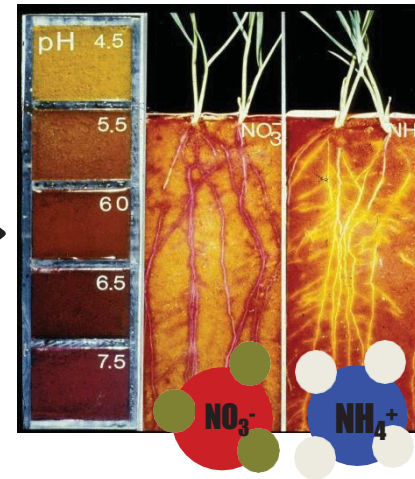
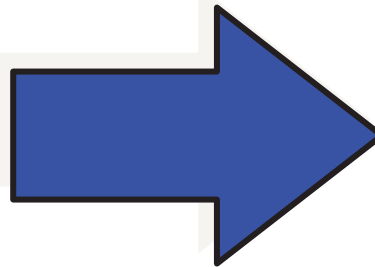
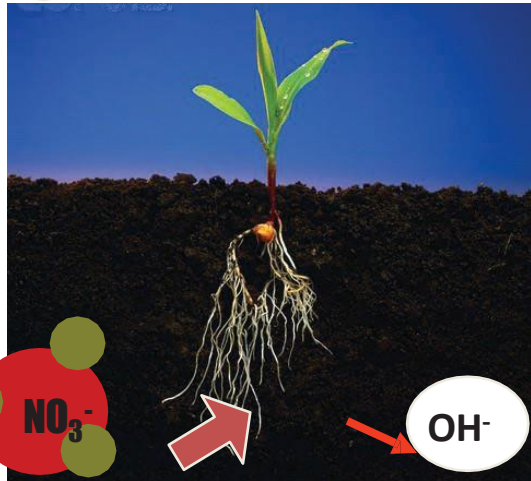
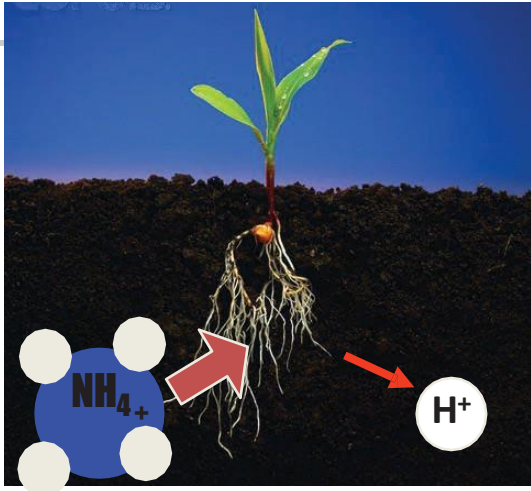
NORMAL FERTILIZER



Root growth in Avocado Quillota, Chile.



Novatec causes acidification of rhizosphere, Improving uptake of P , Fe, Zn, Cu and others TE. !



Ammonium preferential absorption causes rhizosphere acidification. Nitrates preferential absorption causes rhizosphere alkalization. !