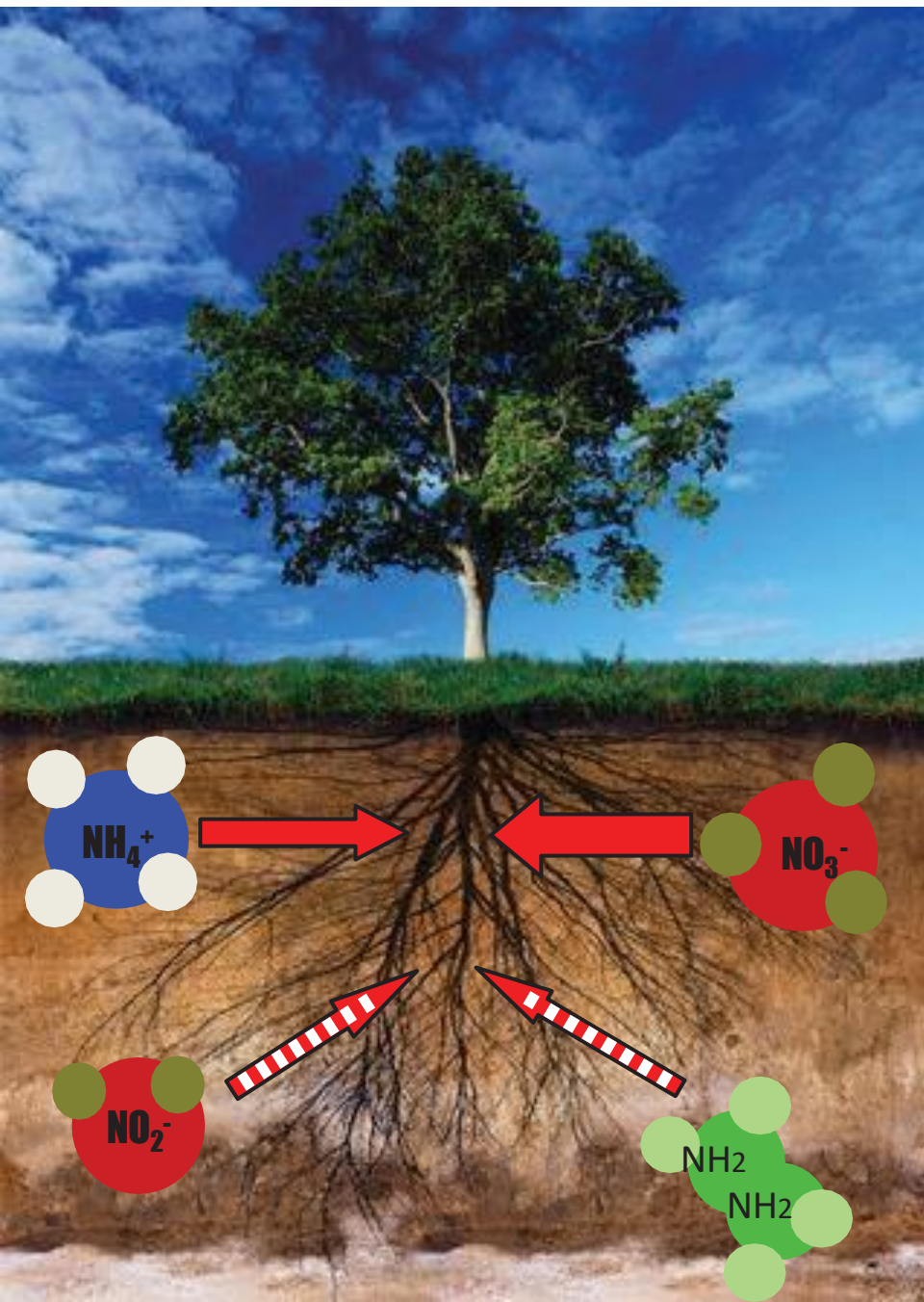




# Technology – NovaTec®

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



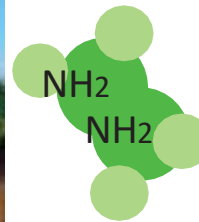
Soil nitrogen could be present in any of the following forms:



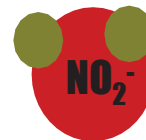
Nitrate → Easily leachable and volatile. Represents more than 90% of N content in the soil.



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.



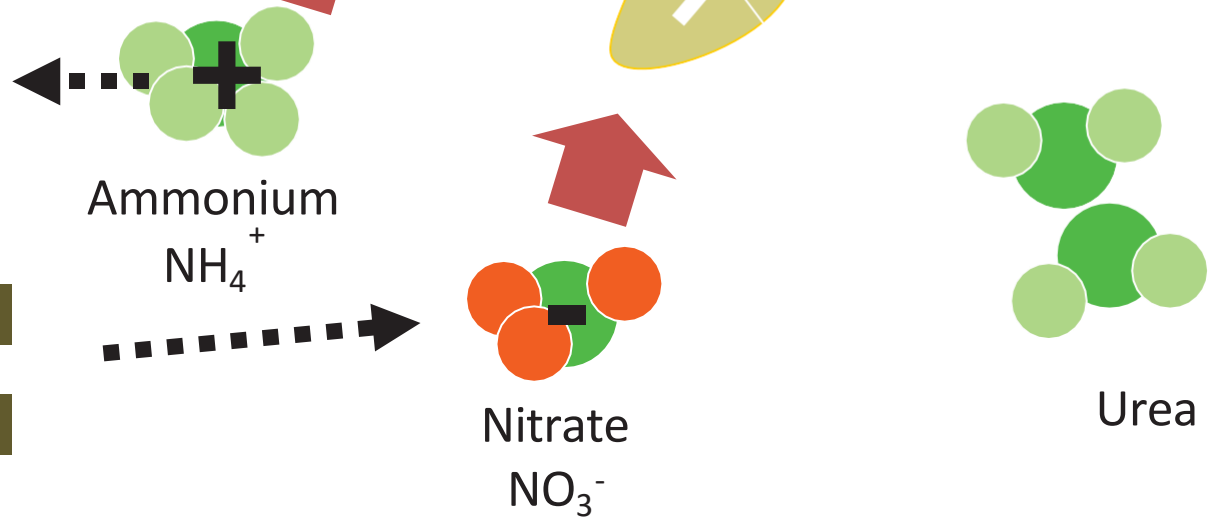
Nitrite → Easily leachable. Barely present in soils (Is rapidly transformed into Nitrate by soil bacteria).

**Ammonium ( $\text{NH}_4^+$ ) and Nitrate ( $\text{NO}_3^-$ ) are the main forms of N uptaken by plant**



Soil

Root







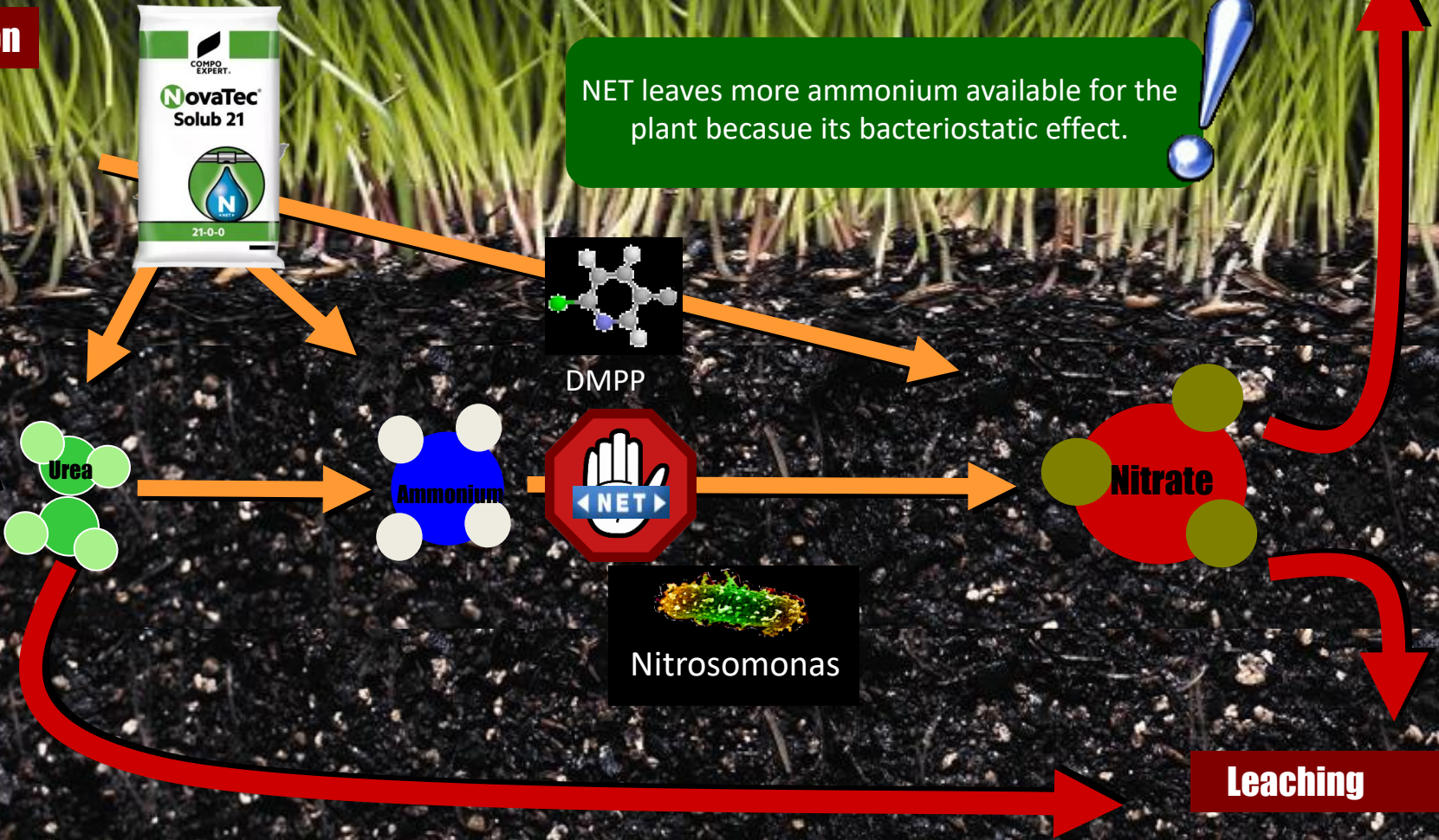
NET technology is not a CRF or SRF, but  
Decreases leaching and volatilization  
of Nitrogen.

**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 its bacteriostatic effect.

**Volatilization**

**Volatilization**



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

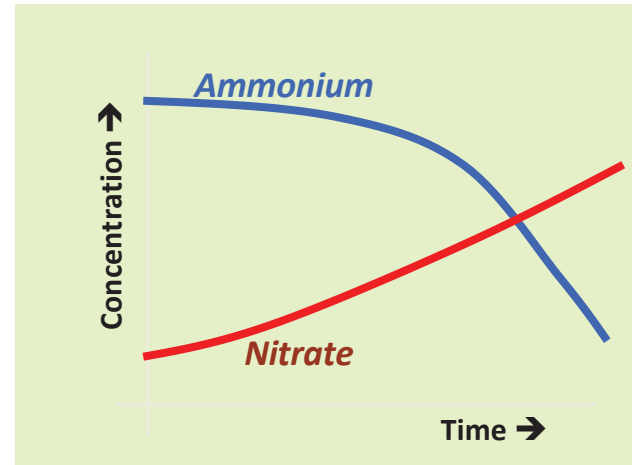
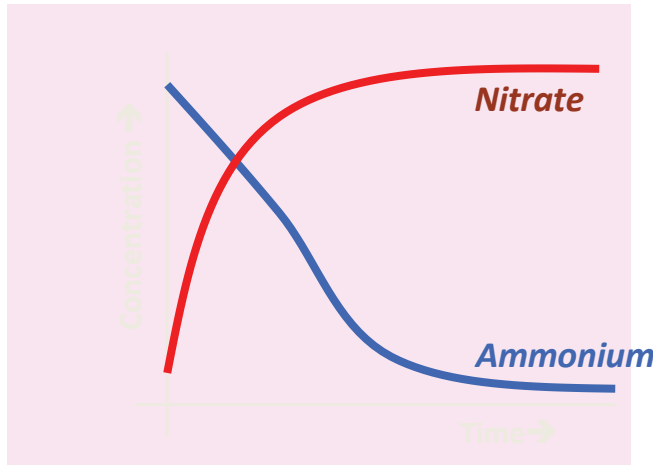


## Fertilizers



Without Inhibitor

With Inhibitor



# Influence of Temperature of NH<sub>4</sub> nitrification.

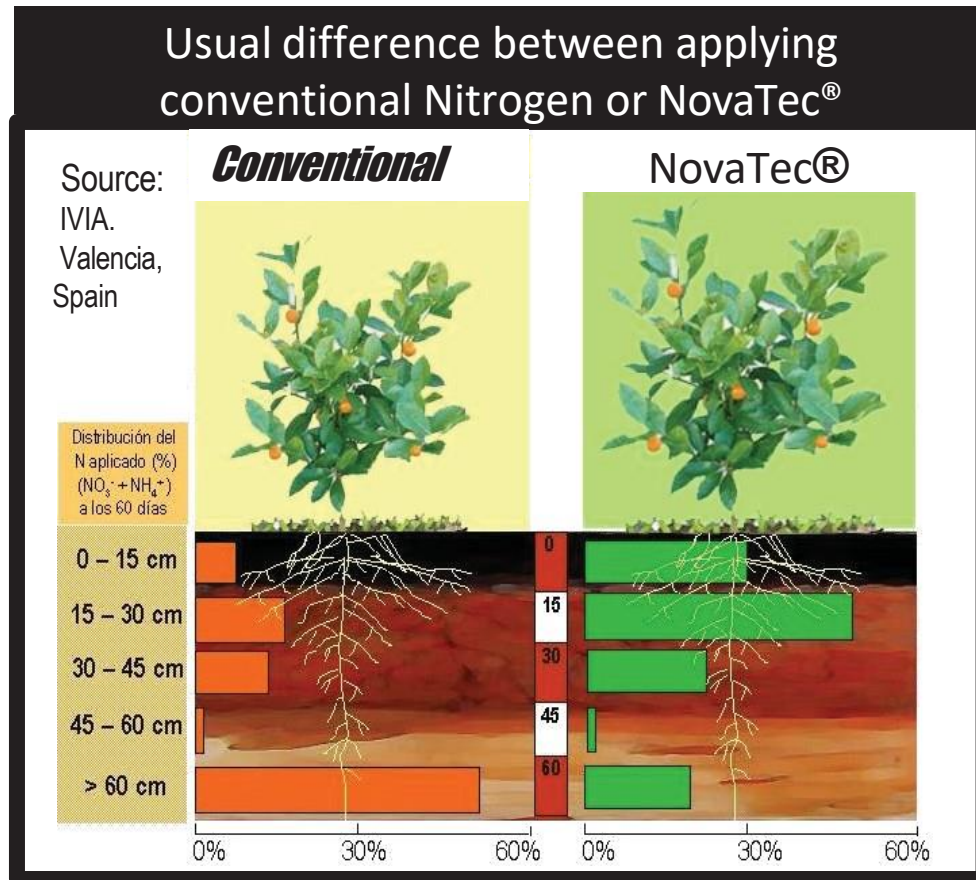
Model calculation based in BASF studies

[% nitrification of applied NH<sub>4</sub>]

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**

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

**AMINOACIDS**

**AMMONIUM**



**NITRITE**

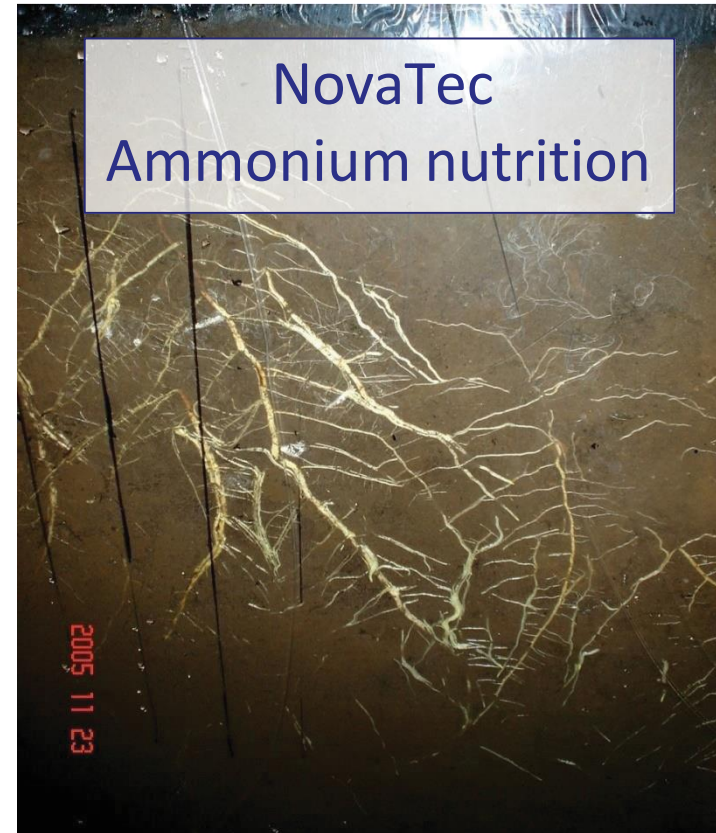
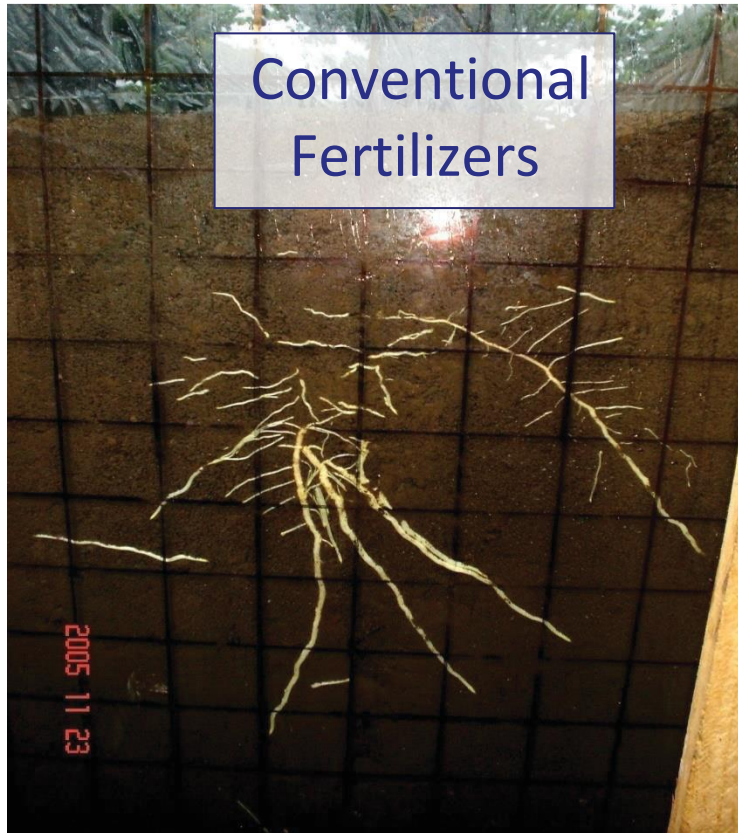
**NITRATE**

**NORMAL FERTILIZER**

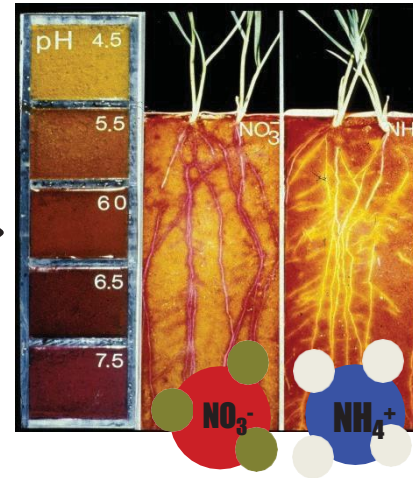
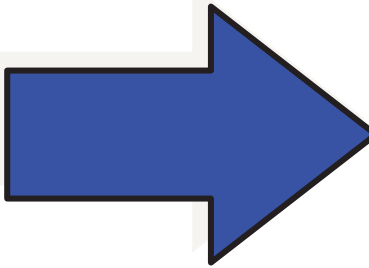
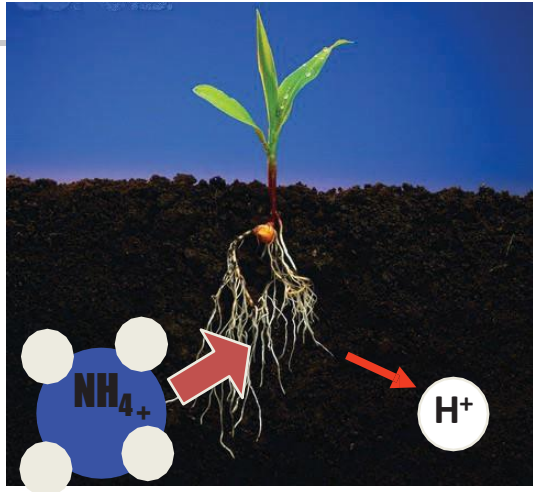




# Root growth in Avocado Quillota, Chile.



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.

