

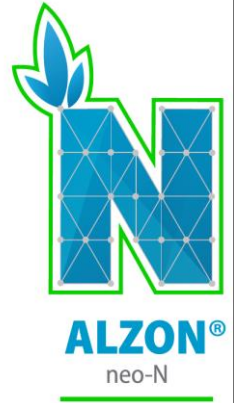


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Agricultural Chemist since 1984



# Alzon Neo-N: Stabilised Nitrogen

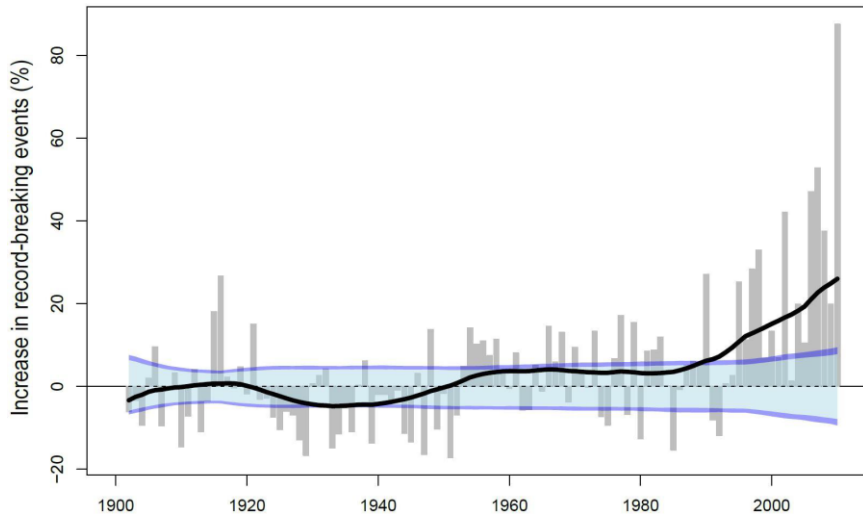
*Alasdair Ralston*



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# Increases in Extreme Weather



J. Lehmann, D. Coumou, and K. Frieler, "Increased record-breaking precipitation events under global warming", Climatic Change, vol. 132, pp. 501-515, 2015.



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## Increases in weather Extremes



Drought: April 2017



Prolonged Rainfall: June/July 2012




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## EU National Emissions Ceiling Directive


Updated December 2016

- Global GHG emissions targets are off track so further attention to address this is likely.
- UK has signed up to reduce 5 pollutants, including Ammonia.
- In Germany legislation is in place where uninhibited urea-based fertilisers cannot be spread on the surface of land in order to reduce ammonia emissions.
- The addition of urease and nitrification inhibitors is proven to have had a significant impact in reducing losses.


  
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## Stabilised Nitrogen- Alzon Neo-N



Urea (46% N)  
+  
Nitrification Inhibitor  
+  
Urease Inhibitor



WORLD FIRST  
Security  
✓ Environment  
✓ Yield

**ALZON®**  
neo-N

  
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## Alzon Neo-N: Inhibited Urea



Urease inhibitor (2-NPT)

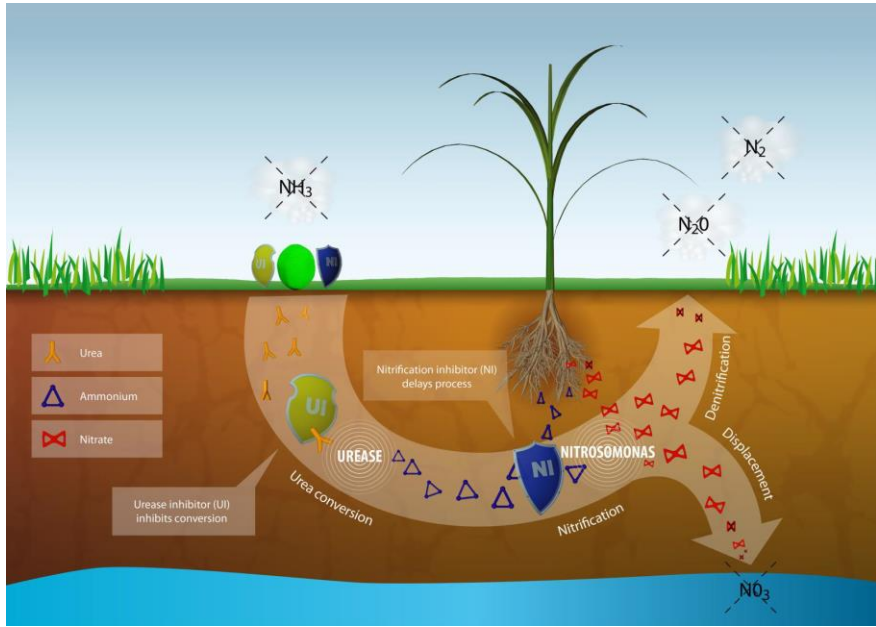
Nitrification inhibitor (MPA)



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## Effect of Nitrogen Inhibitors



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## Differences: Urease- and Nitrification Inhibitors

	Urease Inhibitor	Nitrification Inhibitor
Effect	Slows down the conversion of urea to ammonium	Slows down the conversion of ammonium to nitrate
Time	1-2 weeks	6-10 weeks
Reduces....	Ammonia emissions	N <sub>2</sub> O, N <sub>2</sub> , NO <sub>x</sub> , NO <sub>3</sub>
Advantages	Drought and high temperature tolerance, Higher N efficiency, Reduced carbon footprint	Higher N efficiency, reduces application no, lower risks after fertilisation.





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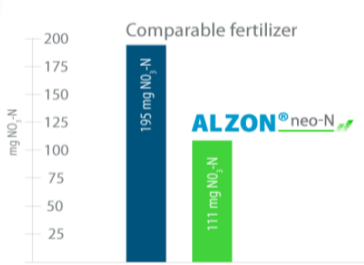
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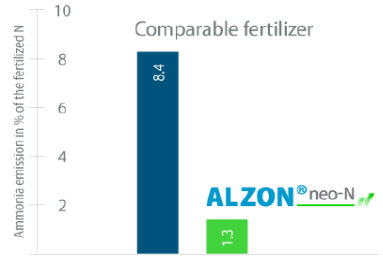
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## Secure for the environment

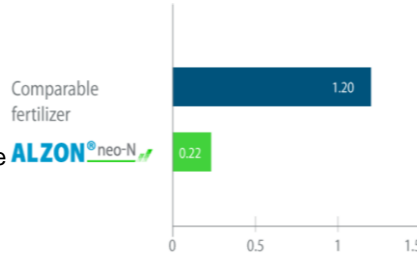


Alzon Neo-N reduces the risk of ammonia losses almost completely



Alzon Neo-N can reduce nitrate leaching from the root area by up to 50 %

Alzon Neo-N can reduce nitrous oxide emissions by more than 50 %



LAF Cunnersdorf: Average values for 15 tests with winter wheat (2013-216)



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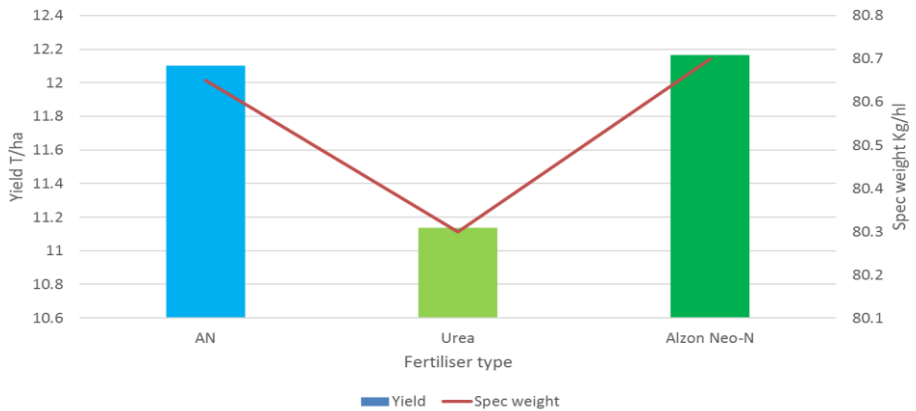
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## Our own trials

Yield effect with 2 x passes



MSP are actively undertaking independent trials with Scottish Agronomy investigating the benefits of using Alzon Neo-N, we are moving into our third year of trials.



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## Costings 17/10/17 - MSP

	Alzon Neo-N (£260/t)	National 33.5% (£230/t)	Urea (£300 /t)
£/kg N	£0.565	£0.687	£0.652
Cost/ha of N @ 200 kgs/ha	£113.04	£137.31	£130.43
Extra expenditure/ha	-----	<b>£24.27</b>	<b>£17.39</b>



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## Benefits of Alzon Neo-N

- Accurately spreads up to 36m
- All weather security
- Reduced losses
  - Better air quality
  - Better water quality
  - Better climate
  - Better n efficiency
- High nutrient content ensures additional benefits in relation to transport, handling and spreading.
- Can spread in 1-2 applications in winter cereals
  - Reduced spreading costs
  - Saves work



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## Blending with Alzon Neo-N

- MSP have our own blending plant so very flexible with blends.
- Alzon Neo-N can be blended with AS and Polysulphate (is Urea based so cannot be blended with AN containing fertiliser).

Alzon + AS	Alzon + Polysulphate
41N, 12SO <sub>3</sub>	30.0.5 + 17SO <sub>3</sub>
39N, 19SO <sub>3</sub>	32.0.4 + 15SO <sub>3</sub>
36N, 18SO <sub>3</sub>	



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## Questions?