



Sonic Essentials

- ✓ established in 2007
- ✓ advocates globally for improved crop
 - ✓ nutrition
 - ✓ yield
 - ✓ human health
- ✓ constantly evolving to meet customer needs
- ✓ brings together a team of talented individuals in materials chemistry, manufacturing, research, engineering, and most importantly agronomy
- ✓ products are developed and manufactured in Australia in a world class manufacturing site uniquely equipped with specialised equipment to produce ultra-fine nano-sized particles



HEAD OFFICE - MOOROOPNA, MANUFACTURING - MELBOURNE - *PROUDLY PRODUCED IN AUSTRALIA!*



SonicEssentials



www.sonicesentials.com.au



SonicEssentials



www.sonicesentials.com.au



SONIC
essentials™

icOnTM
Essential Trace Minerals

NutriTM
ESSENTIAL

lcoatingTM
fertiliser micronutrient

gro
Start**PRO**

Not A TraceTM
organic cleaning compound

icOn PHITETM



groTM
StartPRO
ROOT BOOST



Root Boost Pro is ideal for establishment of all annual and perennial crops and seedlings and highly effective to stimulate established trees and vines emerging from dormancy.

Analysis w/v N 60g/L P 100g/L K 30g/L Zn 5g/L

BENEFITS INCLUDE:

- Stimulates vigorous root growth and regenerates damaged roots.
- Breaks down complex organic molecules
- Increases seed germination and promotes the development of roots and shoots.
- Enhance plant uptake of nutrients
- Strengthens resistance to pests and pathogens
- Stimulates microbiological life and healthy soil.

Nitrogen (N)

Nitrogen (N) is vital for plant growth, boosts chlorophyll production, leaf and stem growth, photosynthesis, hormone regulation, and overall health.

Phosphorus (P)

Phosphorus (P) is crucial for early plant growth, aids root development, energy production, and nucleic acid biosynthesis. It supports cell division, photosynthesis, and carbohydrate movement. Deficiencies are common in alkaline and acidic soils due to binding with calcium, aluminium, and iron.

Potassium (K)

Potassium (K) is essential for plants, aiding in osmotic regulation, nutrient transport, disease resistance, and overall growth. It enhances fruit quality, improves drought tolerance, and supports cell division. Proper potassium management prevents stunted growth and poor yields.

Zinc (Zn)

Zinc (Zn) boosts early crop growth by enhancing root development, enzyme function, and protein synthesis, leading to stronger, healthier plants.

Development of new enhanced efficiency nitrogen products to improve nutrient delivery

Tessa Faulks

- PhD student in Chemistry at Monash University (Melbourne) and Sonic Essentials
- Background in science with an agricultural/environmental emphasis
- Research focuses – improve nitrogen delivery to agricultural systems through novel and sustainable technologies

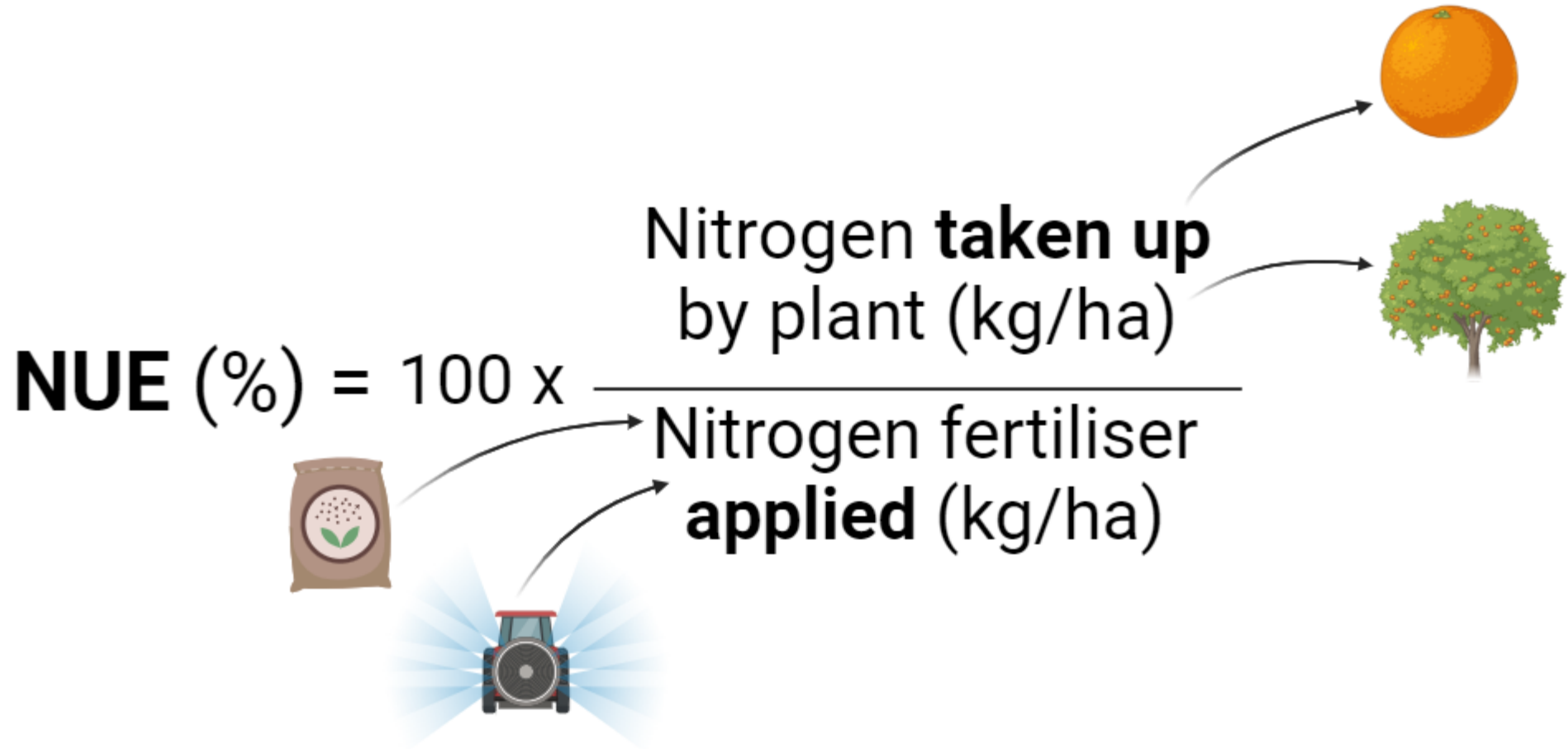


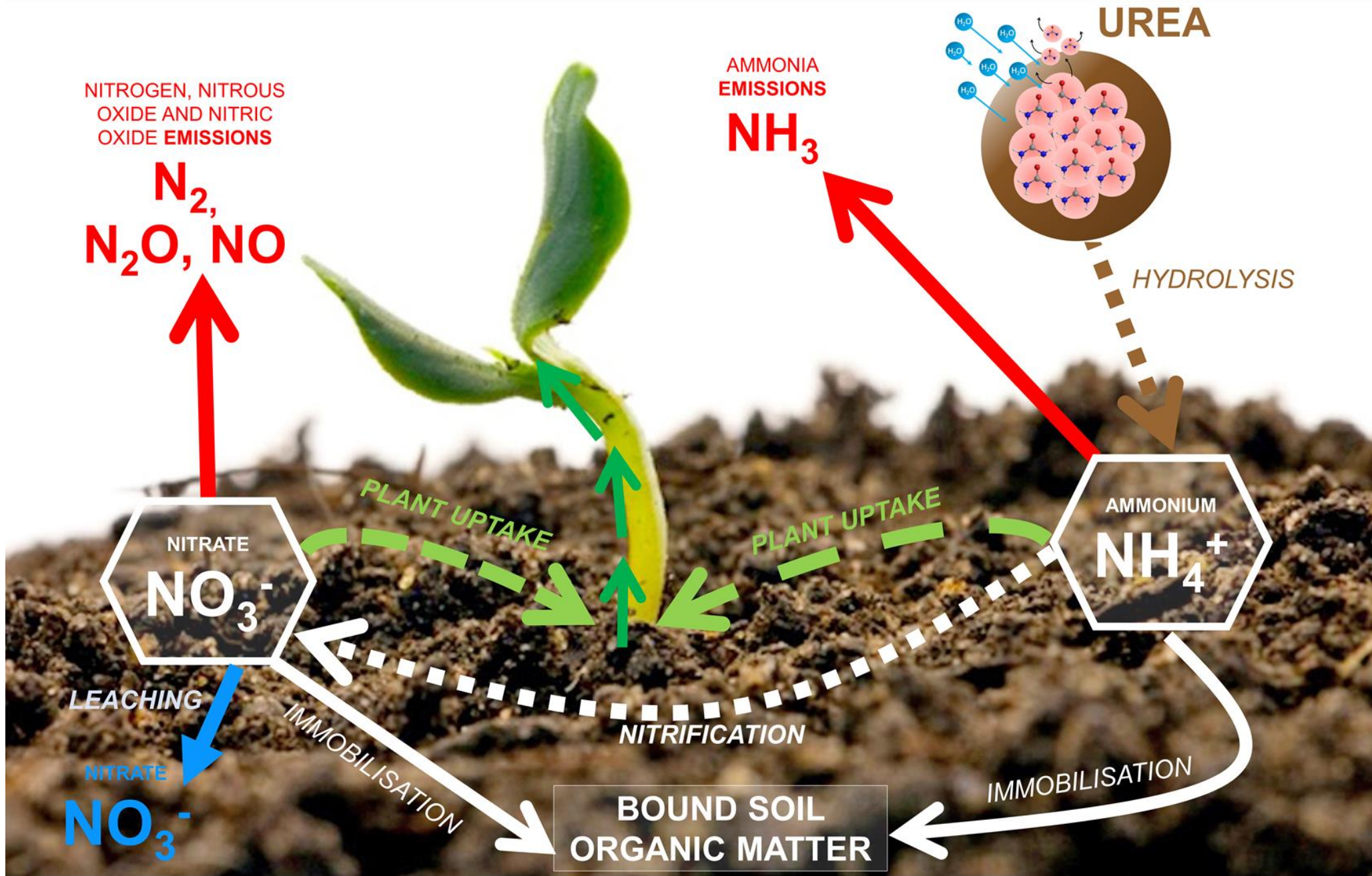
Nitrogen



- Nitrogen essential for plant development and fruit growth
- ~ approx. 50 % of N is lost to the environment after fertilisation

Nitrogen Use efficiency (NUE)





Improving NUE

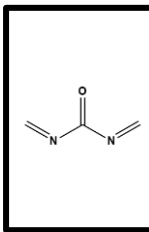
Management practises such as four **R's**: **Right** source, rate, timing and placement.



Coating

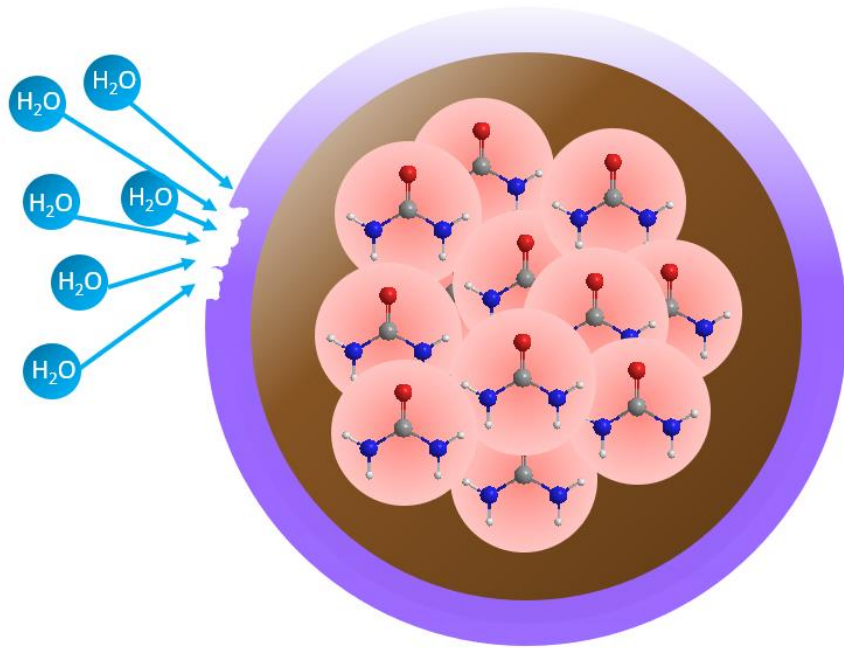


Enzyme inhibitors



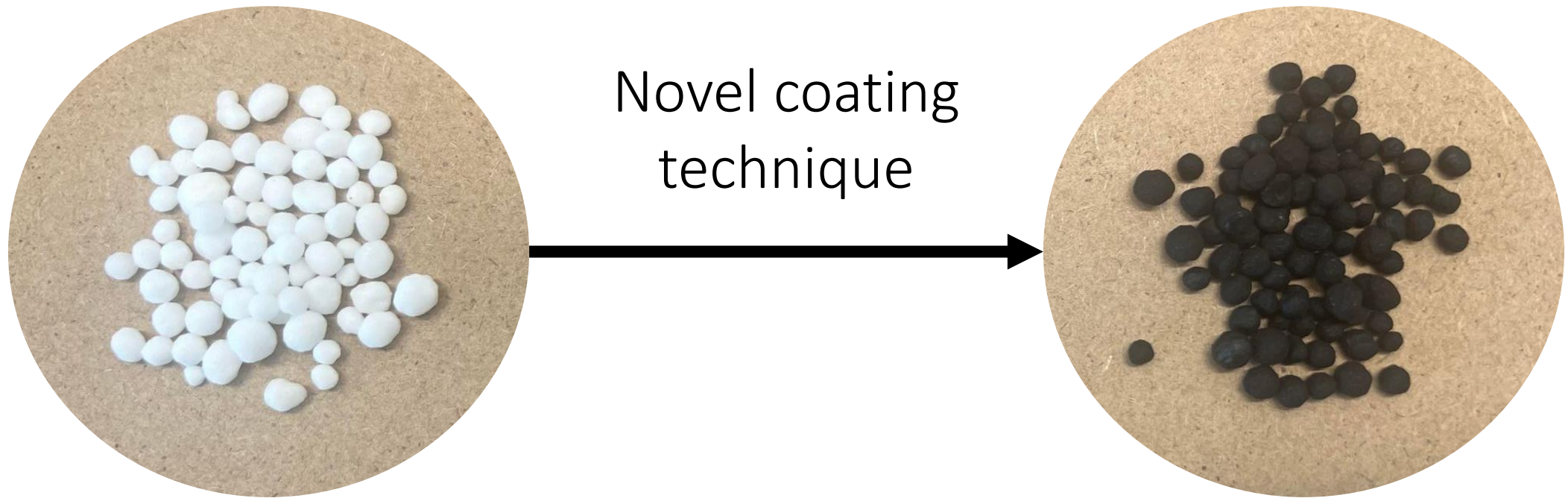
Modified nitrogen source

Improving NUE – coated ureas

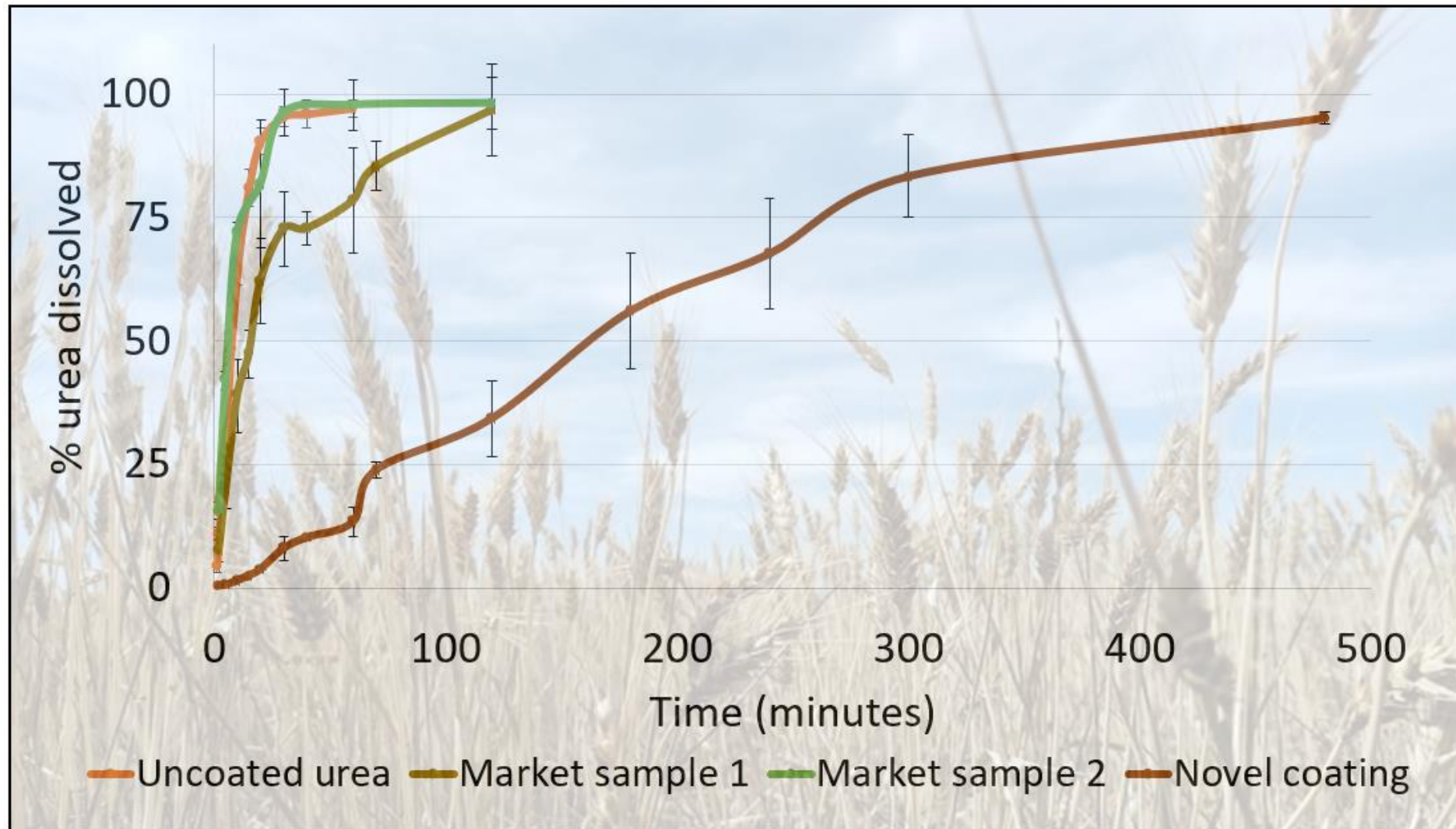


- Variable in effectiveness and efficiency
- Expensive
- Non biodegradable

New technologies

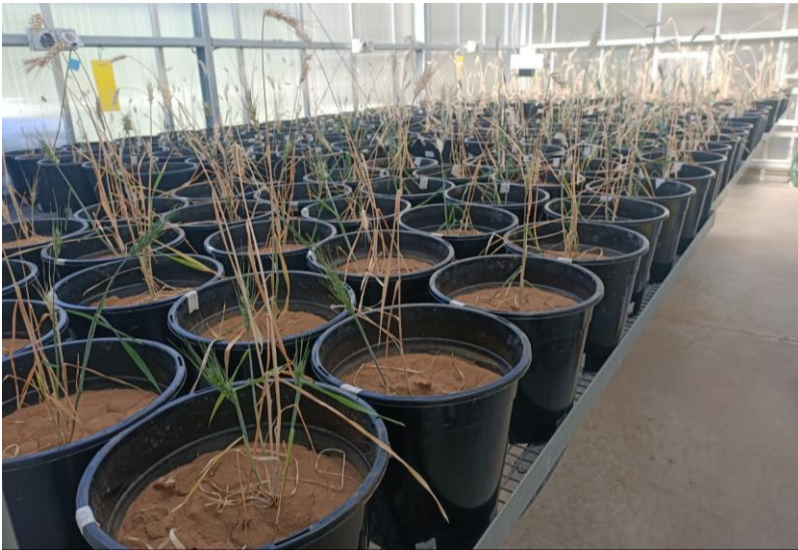


New technologies



Future steps

- Full coating analysis
- Soil column leaching trial
- Pot trials (Monash University Glasshouse)
- Field trial (Sonic Essentials Mooroopna field site)



Thank you

- Sonic Essentials and team
 - Monash University – Chemistry Department
 - Prof. Tony Patti, Prof Terry Turney and Ass. Prof. Victoria Blair
 - Patti and Blair research groups
-