



agrichem[®]

NutriSeed[®] Legume for Chickpeas

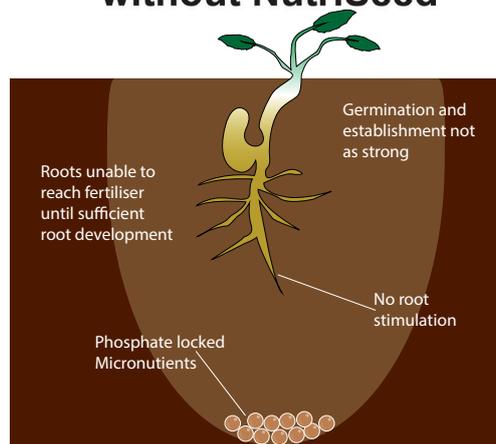
Agrichem is proud to offer the Chickpea industry NutriSeed[®] Legume as a nutritional seed dressing for the 2013 planting season.

This product will be available either from resellers for on-farm treatment, or via commercial seed sheds for application along with other fungicides as a one-pass application.

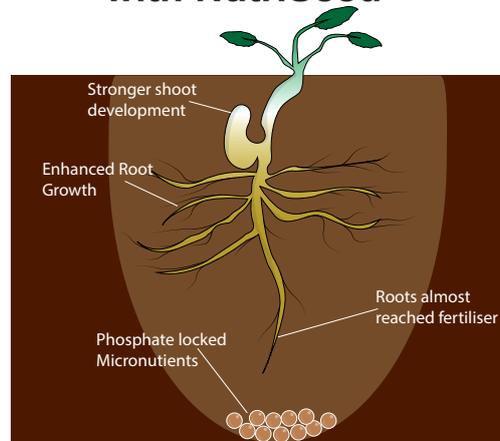
Benefits of NutriSeed[®] Legume:

1. Penetration of micronutrients and activators through the seed coat upon imbibition triggers seed hormonal activity.
2. High hormonal activity improves hook formation in dicots, thus reducing mechanical impedance of the soil so that shoots can be thrown out, improving emergence.
3. Optimal placement of micronutrients to avoid soil interactions such as negative interactions of soil phosphate with trace elements.
4. NutriSeed is effective independent of soil types because of the optimal placement of nutrients on the seed.
5. Improved root system and seed metabolism.
6. More vigorous roots able to tap into the fertiliser band earlier to give better growth response and faster establishment which leads to higher yield potential.
7. Good root system exploits soil moisture and nutrients from a larger area thus reducing seedling water stress.
8. Sets the potential for higher yields.
9. NutriSeed[®] nutrients help to reduce diseases such as Rhizoctonia root rot.
10. Economical and Easy to Use: Targeted nutrient delivery through seed treatment technology is the most efficient and cost effective method of delivering trace elements directly to an emerging plant.

Seed Germination without NutriSeed[®]



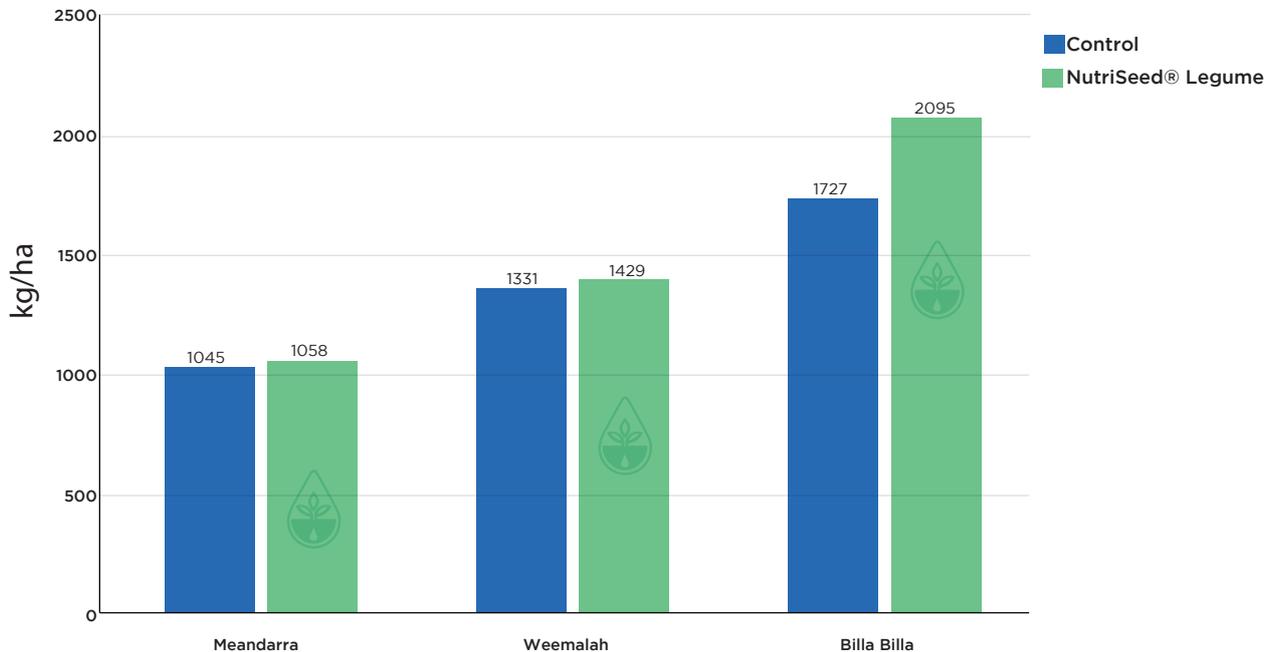
Seed Germination with NutriSeed[®]



Field Trials

In the 2012 chickpea season, Agrichem and their trial partners undertook trials across the Western Darling Downs and Weemalah areas to see if there were responses to the product. Yields were affected by weather (low rainfall) in some locations. Where in-crop rainfall was around average (Bill-a Billa site) and overall crop nutrition was adequate, crop response to the treatment was significant.

Graph 1: Trial yields of Chickpeas treated with NutriSeed® Legume 2012



For each trial, economic responses were obtained. Based on \$500/T on-farm pricing (common for 2012 chickpea crops), \$100/T product costs and 50 kg/ha planting rate, the economic responses are summarised in table 1.

Table 1

| Site | Yield Improvement Over Control (kg/ha) | Cost of Treatment | Net Difference (\$/ha) | Net ROI |
|----------------|--|-------------------|------------------------|----------------|
| Meandarra | 13 | \$5.00 | \$1.50 | 130% |
| Weemalah | 35 | \$5.00 | \$12.50 | 980% |
| Billa Billa | 368 | \$5.00 | \$179.00 | 3680% |
| Average | 138 | \$5.00 | \$64.00 | 1596.6% |

Effect on nodulation:

In past seasons, there have been concerns about the effect of fertiliser seed treatments on the nodulation of chickpeas. Nodulation tests performed by various inoculant suppliers have been done “in vitro” rather than “in-situ” so no field validation has occurred. As part of the trial process performed by Agrichem in the 2012 winter, nodulation counts were performed on two out of the three trials. The results are summarised in table 2. It is clear from these trials that NutriSeed® Legume, when applied separately to the inoculant had no deleterious effect on nodulation in chickpeas.

Table 2

| Trial Location | Treatment | Average Number of Nodules / plant (+/- standard error) |
|----------------|------------|---|
| Meandarra | NutriSeed® | 29.7 (+/- 3.0) |
| | Control | 19.6 (+/- 8.1) |
| Weemalah | NutriSeed® | 20.0 (+/- 3.9) |
| | Control | 13.8 (+/- 2.1) |

Application

| Rate/T Seed | Comments |
|--|--|
| Mix 2L / T NutriSeed® Legume Part A with 2L / T NutriSeed® Legume Part B and 2L / T NutriSeed® Legume Part C | Ensure seed is evenly coated or dusting may result. Rates may vary depending on seed moisture and ambient temperature. |

Agrichem Compatibility Chart

| | NutriSeed® Legume |
|-----------------|-------------------|
| P Pickle T | CA |
| Thiraflo | CA |
| Apron XL 350 ES | CA |

CA = Compatible with agitation

Inoculant compatibility:

It is important that NutriSeed® Legume and chickpea inoculant is not mixed together. The application of NutriSeed® Legume with chickpea is best done at the same time as application of either P Pickle T, Thiraflo or Apron. Chickpea inoculant can be applied once the seed has dried after application with the fungicide/fertiliser combination.

Manufactured in Australia:

Agrichem's nutrition products are manufactured under stringent quality control and product testing procedures, thus guaranteeing performance and quality.



Control

NutriSeed® Legume

Photo 2: Superior root systems in NutriSeed® treated plants

For further information please contact your local Agrichem Area Manager:

1. South West Queensland: **Ed Redfern** Mobile: 0427 308 853 • Email: edmundr@agrichem.com.au
2. Or the Agrichem technical team on 1800 65 47 58

NOTE: The suggested rates of application are designed for typical Australian conditions and such should be used as a guide only. Each farmer's climatic, water quality, soil types, application processes and practices may differ and therefore necessitate corrections to ensure optimum results. Clarification can be referred to your nearest Agrichem representative.