APPLICATION RATE

Mix 10 litres of *Bio-N* with 200 litres of water per hectare.

Apply to well structured soil (not waterlogged or compacted).

Apply with low pressure, large droplet or stream nozzles for maximum soil application.

Will not contaminate water courses

Advised to spray at coolest part of day

Best applied in the rain

To supply 70 - 100 kg/ha of nitrogen to 20ha equates to 200 litres of *Bio-N* and costs just £400 (£20/ha)

69 kg/ha of nitrogen to 20ha equates to 4 tonnes of AN 34.5% and costs Over £1,000 (£50/ha)

60 kg/ha of nitrogen to 20ha equates to 200 tonnes of 6% N FYM and just looks a mess!

NITROGEN PRICE COMPARISON TO PROVIDE 70KG/HA OF NITROGEN TO 20HA

Product	Amount required	Cost	£/ha	£/kg of N	Efficiency of
Urea (46%N)	3t	£900	£45	£0.51	50%
AN (34.5%N)	4t	£1000	£50	£0.67	50%
Bio-N (70% N equivalent)	200 litres	£400	£20	£0.28	100%

SUMMARY:

- STABLE NITROGEN
- NO VOLATILISATION
- NO LEACHING
- LOWER COST
- REDUCED NITRATE LEVELS
- IMPROVES AIR AND WATER MOVEMENT
- SMALLER STORAGE AREA REQUIRED
- IMPROVED HEALTH TO ANIMALS COMPARED TO ARTIFICIAL NITROGEN PASTURES
- BETTER SHELF LIFE FOR FOODS
- REDUCED DISEASE PRESSURE SUCH AS FUSARIUM OR PHYTOPHTHORA

Soil Fertility Services Limited, Harvest House, New Road, Crimplesham, Norfolk PE33 9FH
Tel: (01366) 384899 Fax: (01366) 380205 E mail: info@soilfertilityservices.co.uk
www.soilfertilityservices.co.uk

BIO-N

ATMOSPHERIC NITROGEN (N_2)

(70,000,000 kg/ha)

SOIL NITROGEN

(4000 kg/ha)

The atmosphere contains over 70,000 tonnes of nitrogen over every hectare (30,000 tonnes per acre) of your soil. Your soil contains another 4,000 kg or more. But none of this nitrogen is in the form that your crop can easily use…

…**UNTIL NOW**

The NEXT GENERATION of NITROGEN FERTILISER

BENEFITS

- Reduce expensive artificial nitrogen
- Take advantage of atmospheric nitrogen
- Promotes root growth = Healthier Plants
- Releases Phosphate = Stronger Growth

START CAPTURING LOW COST NITROGEN WITH *Bio-N*

THE NEXT GENERATION OF NITROGEN DIRECT FROM THE ATMOSPHERE TO THE CROP

How Does it Work?

The ***Bio-N*** bacteria work by feeding off carbon compounds and exudates pushed out by plants through their roots. In return ***Bio-N*** will fix plant available nitrogen from the inert atmospheric nitrogen found in soil pores and cycle a range of macro and micro elements bound in your soil back to the plant. Leading to a more nutritionally balanced crop that is healthier and more disease resistant. The nitrogen fixers are a mix of free soil living bacteria and some that will actually bind to the roots, creating a truly symbiotic partnership.

Bio-N produces Plant Growth Promoters including auxins, gibberellins and cytokinins with humic and fulvic acids. These stimulate plant growth, encourage strong roots and green growth without soft growth typical of nitrate nitrogen fertiliser induced flushes.

What is *Bio-N*?

Bio-N is the **next generation nitrogen fertiliser** providing a true slow release of nitrogen that is 100% efficient to your crop as and when required. **A consortium of nitrogen fixing bacteria in a biological activator** which converts inert atmospheric nitrogen and nitrogen from organic matter into readily plant 'available' ammonium directly to the plant.

Bio-N can be used on a range of crop types, independent NIABTAG crop trials show that ***Bio-N*** will fix over **70 kg/ha** of nitrogen (*see table below*).

Either replace applied nitrogen with *Bio-N* (for a more cost effective source of N) or add on top of standard rates to boost yield and protein levels even further.

	NIABTAG WINTER WHEAT TRIALS 2015		
Treatment No.		**Cambridgeshire**	
		Yield (t/ha)	**Protein (%)**
1	190kg/ha N	**12.5**	**12.9**
2	190kg/ha N + ***Bio-N***	**12.8**	**13.3**
3	120kg/ha N + ***Bio-N***	**12.6**	**12.7**

Golden Rules of Using *Bio-N*

1. Soil must be well structured - ideally 25% air
2. Soil temperature must be at least 6°C although 8°C would be better
3. Must be applied either in rain or before a rain
4. Ideally applied on it's own, NOT mixed with anything
5. Large droplet size or dribble bar.

Results from Future Bio-gas, who ran independent 1 year trials, applying ***Bio-N*** at the 4 leaf stage in some field scale trials, in a low yielding trial in a very challenging situation. Very high pH, low Mg and very little organic matter.

We got an excellent and significant response with a yield increase of 3.46 t/ha over the control plots, which followed the standard fertiliser guidelines in RB209.

This was a gross profit of £120/ha and a net profit of £90/ha when the cost of the *Bio-N* application was taken into account.

(The application rate of *Bio-N* has since been adjusted slightly)

Organics, NVZs and the Environment

Bio-N is organically approved and is **a REVELATION for ORGANIC producers.** An application will provide a slow steady release of nitrogen for any growing crop for the entire season.

The nitrogen in ***Bio-N*** is 100% efficient (why would the bacteria fix more than is required?) therefore leaching and run-off are zero. Ideal for NVZ's and **doesn't** count towards your farm N-Max limits.

Reduce your carbon footprint with ***Bio-N*** as nitrogen is fixed in the soil, compared to artificial fertilisers e.g. Urea manufacture will release 11.19kg of CO_2 equivalent per kilogram of N to the atmosphere.

Organic Vegetables

These carrots and leeks were trials carried out on an organic farm in Lincolnshire. The differences in quality are easily visible. Both ***Bio-N*** treatments show clear increases in root growth, crop uniformity and green leaf area.

Both crops showed dramatic increases in marketable yield where ***Bio-N*** was used. The leeks had a 43% increase in yield and the carrots a 34% increase. This was brought about by providing a steady source of nitrogen and balancing out the plants nutritional status, resulting in healthy nutrient dense organic vegetables that were harvested earlier than the standard organic crop, resulting in a premium.