

# Making the Most of Bio-Fertiliser



INNOVATORS IN WASTE SCIENCE  
AND RECYCLING TECHNOLOGIES

## Giving farmers a cost effective alternative to conventional fertilisers

Bio-Fertilisers are produced here in the UK and are available to purchase in select areas to replace costly compound fertilisers. They are a proven source of key nutrients and organic matter beneficial for both soil and crops.

Bio-Fertiliser is produced by passing food waste through the digestion process at a specialist treatment facility where it is converted into:

- Gas (energy)
- A nutrient rich liquid (Bio-Fertiliser)

The Bio-Fertiliser is especially rich in available Nitrogen (N) and Potash ( $K_2O$ ), but importantly also provides sulphur, magnesium, phosphate and trace elements not normally found in manufactured fertilisers which are essential for plant growth.



### Key Benefits

- Provides major plant nutrients Nitrogen (N) & Potash ( $K_2O$ ) plus sulphur, magnesium and phosphate
- Rich source of immediately available N
- Contains beneficial trace elements not present in compound fertilisers
- Replenishes organic matter to soil
- Improves soil structure and workability
- Increases soil moisture retention
- Prolongs life within the soil (biomass)
- Aids soil carbon capture
- Approved for use on organic crops

By choosing to use Bio-Fertiliser you will significantly reduce your dependency on compound fertilisers and realise major cost savings.



4R RECYCLING AND 4R ENVIRONMENTAL CONSULTANTS ARE PART OF THE 4R GROUP

Call us on: 0800 0121 769  
or email: [info@4R-Group.co.uk](mailto:info@4R-Group.co.uk)



Our product leaflets are on our website.  
Find out more by scanning this QR code on your mobile device.

# Using Bio-Fertiliser

## All Bio-Fertiliser is delivered and applied by 4R Group

4R Group has a specialist in-house technical team made up of soil scientists and agronomists and our operational field managers are FACTS and WAMITAB qualified. Each application of Bio-Fertiliser is carefully calculated to match the unique properties and characteristics of receiving soils and the demands of specific crop rotations.

Bio-Fertiliser is traditionally supplied in liquid form\* and is suitable for use on:

- **Grassland**
- **Arable**
- **Energy crops**

It is applied using either a band spreader with a trailing hose/shoe or a shallow injector via tractor drawn tankers or umbilical feed systems. Applications are made as close to the plant root as practical to maximise crop uptake and limit nitrogen losses to the atmosphere.

For application to standing crops, via tramlines, 24m and 36m booms are used, complete with reduced width tyres to prevent crop damage and soil compaction.

As timing for applications can be critical, our sites are managed to deliver between 700 - 1,000m<sup>3</sup> per day so that we are 'in and out' over the shortest period possible to:

- **Maximise benefits of Bio-Fertiliser**
- **Minimise on farm disruption**

\*Bio-Fertiliser can also be treated at source to produce separated fibre and separated liquor.



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## PAS 110 Bio-Fertiliser Certification Scheme



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The majority of Bio-Fertilisers produced across the UK, are either certified or working towards certification under the Bio-Fertiliser Certification Scheme (PAS110 QP).

The pre-spreading process is very similar for both pre-Certified and Certified Bio-Fertilisers with the main difference being the requirement of a deployment to be registered prior to application for pre-Certified Bio-Fertiliser. 4R Group staff will secure all deployments if required.

The table opposite demonstrates the differences between Pre-Certified & Certified Bio-Fertiliser.

**There is no difference in the safety, quality or fertiliser value between pre-Certified or Certified Bio-Fertiliser.**

Bio-Fertiliser	Pre PAS110 QP Certification	PAS110 QP Certified
<b>Treatment</b>		
Source separate food waste collection	✓	✓
Delivery inspection	✓	✓
Macerating & screening	✓	✓
Full digestion process	✓	✓
Full pasteurisation process	✓	✓
Post pasteurisation APHA testing	✓	✓
<b>Transport</b>		
Waste carriers licence required	✓	✗
ABPR registered	✓	✓
Load supply note providing delivery detail	✗	✓
Waste Transfer Note providing delivery detail	✓	✗
<b>Application</b>		
Soil testing / analyses	✓	✓
Full assessment soil suitability	✓	✓
Assessment of crop requirements to determine application rate	✓	✓
EA agreement / deployment	✓	✗
Application methods	✓	✓
Land use / crop type	✓	✓
Post application records	✓	✓

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## Bio-Fertiliser Storage

Due to the high availability of Nitrogen (N) within the Bio-Fertiliser, there are optimal times for application to maximise its benefits and provide crops with the nutrients they need when they need them most.

During these busy periods, demands on transport and supply of Bio-Fertiliser can be high and supplies limited. To overcome these peaks in demand and to be able to guarantee supply when required, 4R Group is looking to appoint a limited number of partners who can provide storage in either existing lagoons / tin tanks or who are interested in having new storage installed.

### 4R Group will:

- Guarantee supply of minimum annual tonnage of Bio-Fertiliser
- Guarantee application at optimum growing period
- Help with new storage layout and design
- Assist with planning conditions and permits
- Be responsible for all compliance issues
- Assist with some funding for a new lagoon



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## Bio-Fertiliser Questions & Answers

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### What type of product is Bio-Fertiliser?

It is a liquid fertiliser high in available nitrogen (N).

### How is it made?

Fertiliser derived from Anaerobic Digestion.

### What is Anaerobic Digestion?

It is a collection of processes by which **microorganisms** break down **biodegradable** feedstock in the absence of **oxygen** to produce gas and fertiliser.

### What biodegradable material is used in this process?

4R Group only sell Bio-Fertilisers that are food waste based, but any of the following wastes or a combination could be used: animal waste, agricultural waste, energy crops, poultry litter, FYM & wastewater sludge.

### Is it safe to use on farmland land?

Yes. There are strict guidelines and standards that have to be adhered to before being allowed to be used as a fertiliser on farmland.

### Is Bio-Fertiliser a waste?

Yes & No. It depends whether the production facility has been certified and the Bio-Fertiliser is PAS110 QP accredited or not. If it is certified the Bio-Fertiliser is not a waste, but until certification it is classed a waste.

### What is a deployment and what is involved?

If the Bio-Fertiliser is not PAS110 QP accredited, then effectively permission is required from the Environment Agency to spread the

Bio-Fertiliser and this is called a deployment.

4R Group secure hundreds of deployments every year and it is part and parcel of our daily routine. The landowner is not required to do anything, other than confirm which fields are to have Bio-Fertiliser applied to.

### If I want to spread the Bio-Fertiliser myself is this okay?

4R Group provide an all inclusive 'delivered and spread' service within the sale price of the Bio-Fertiliser. It is important that it is applied at the correct application rate and non-spread areas (ditches, hedge lines etc) are carefully observed. However, if we can be assured the same standards will be met, then yes.

### How much land do I need?

Technically there is no minimum amount required but economies of scale usually mean that areas of 50 ha upwards are better. However, please still get in touch if the area you are considering is smaller as your neighbour may also have registered.

### What spreading method is used?

Either dribble bar or injection via tanker or umbilical system.

### When is the best time to order?

There are peaks in demand (particularly spring) so you should register an interest as soon as possible so that you can be booked in.

### If I reduce my compound fertiliser order, can you guarantee me supply of Bio-Fertiliser?

Yes, provided you are booked in.

Obviously there is a limited supply, so the sooner we know the better.

### Can I store the Bio-Fertiliser in my slurry tank to spread when I need it most?

Yes and this would also help smooth out the seasonal peaks and troughs in demand – but it cannot be mixed with slurry.

### I don't have any storage now, but I am interested in putting some in, will you help?

Yes and we would encourage you to. We have constructed lots of lagoons and work closely with the planners and regulators and will help as much as we can.

### What type and size of store is needed?

Ideally, a lined store of approximately 4,000m<sup>3</sup> would be ideal.

### If I put in a lagoon, can you help financially?

Yes. How much we can 'help' will depend on the location of the lagoon, size, construction costs etc, but we are looking for limited number of partners.

### How long will the Bio-Fertiliser be available?

4R Group has contracts lasting up to 25 years with the manufacturers, so we could guarantee supply to you for just about any period to suit your requirements.

### I'd like more information, what do I do now?

Just telephone our office (0800 0121 769) and we will arrange a visit from a 4R Group specialist.

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