



John Innes Manufacturers Association

Technical Data Sheet No 2c

FORMULATION OF JOHN INNES COMPOSTS

MIX RATIO

John Innes (JI) Composts are manufactured using sterilised soil (usually called loam), peat and grit-sand. Traditionally, in the days of stacking grass turf to produce loams with a high organic matter, seven parts of loam, three parts of peat and two parts of grit-sand were hand-mixed and shredded. As nowadays such labour-intensive methods are not practical, manufacturers vary the mix depending upon the type and quality of raw materials available, so as to end up with a product every bit as good as the traditional mixes of old, and in which loam is still the main ingredient. The present day John Innes Composts, whilst based on the original loam:peat:grit formulation, are lighter in weight, flow better, are easier to use and have more stable nutrients than the original mixes.

LOAM

Loams vary considerably and it would be unrealistic to expect JI manufacturers across the UK to use identical formulations, indeed it would be undesirable. When a suitable source of loam is found, its physical properties are analysed so that the required peat and grit levels can be calculated. For instance, a very sandy loam or a heavy clay loam will need more peat than a silty clay loam, whilst a coarse loam will need less grit. The final JI composts will be far less variable than the loams used to produce them.

Loam has to be sterilised, or more precisely pasteurised, prior to use, in order to kill any weed seeds or propagules that might be present, and to eliminate plant pathogens, such as *Pythium* and *Rhizoctonia*, which are often found in field soils.

pH LEVEL

During manufacture of the composts the pH has to be balanced and nutrients added. Peat is an essential part of JI composts, giving them structure and improved available water-holding capacities. Peat, however, is acidic, so ground limestone is also added to raise the pH to around 6.5.

NUTRIENTS

Nutrients are added at different rates depending on the proposed use of the compost. Seeds require few nutrients, whereas some full-grown pot plants and crops such as tomatoes require extra nourishment. JI Seed Compost has a low level of nutrients while JI Potting Composts Nos 1, 2 and 3 have an increasing amount of nutrients, as the numbers would suggest. Naturally, the plant nutrients have been updated to gain the benefits of improved fertiliser technology.

As an alternative to the traditional No 1, No 2, No 3 JI Composts, some manufacturers have produced a single "JI Potting Compost". As with all compromises, this single formulation JI Potting Compost has some advantages and some disadvantages compared with the separate No. 1, 2 & 3 formulations, which were developed to suit plants at different stages of growth.

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J.I.M.A. IS AN ASSOCIATION OF INDEPENDENT JOHN INNES COMPOST PRODUCERS

FORMULATION OF JOHN INNES COMPOSTS (continued)

PHYSICAL PROPERTIES

As manufacturers have to formulate their JI composts with locally available raw materials, it is not possible for JIMA to give details of the precise ingredients and all the various physical parameters. However, all John Innes composts should exhibit high available water-holding capacities and be sufficiently open to encourage air movement, so that a good growing performance can be assured. The table below gives the expected range for the most important properties of JI composts, as manufactured by members of the John Innes Manufacturers Association:

TYPICAL PROPERTIES OF JOHN INNES COMPOSTS (when packed)

Properties	Units	Typical Ranges
Bulk Density	grams per litre	800 - 950
Moisture Content	% by weight	15 - 30%
pH when packed	-	6.0 - 7.0

NUTRIENT LEVELS (when packed)

The conductivity of compost is an indication of the total level of available nutrients - the higher the figure, the greater the nutrient levels. Typical values for the different grades of John Innes Composts are as follows:

John Innes Grade	Conductivity (micro siemens/cm)
John Innes SEED	150 - 300
John Innes No. 1	300 - 450
John Innes No. 2	400 - 600
John Innes No. 3	500 - 700
John Innes POTTING	300 - 600

NOTE: Manufacturers cannot be held responsible for the condition of their products after prolonged storage. (See: JIMA Technical Data Sheet No 5 on Storage of Composts.)

**LOOK FOR THE JIMA[®] SEAL OF APPROVAL
ON JOHN INNES LOAM-BASED COMPOSTS**

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