NUTRIENT WISE DEMOS 2012

PRESENTED BY CREEDY ASSOCIATES

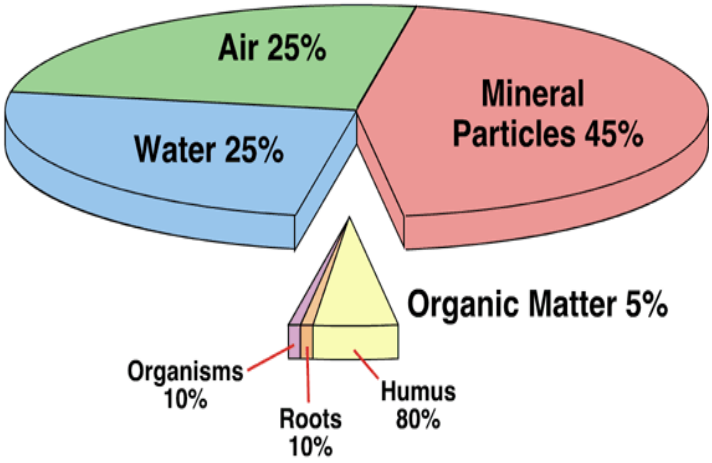
THE IMPORTANCE OF SOIL ORGANIC MATTER

Soil Organic Matter (SOM) is simply a material which was once part of a living organism or produced by one. It occurs naturally in soils and comes from decomposing animals, plant roots and crop residues. More organic matter can be added to soil from various sources including animal manures, composts and alternative wastes.

Lack of SOM is a problem more commonly associated with arable cropping but organic matter declines in any soils where the input of organic matter in crop residues or manures is less than that which is lost through erosion and decomposition. This can occur where organic soils are cultivated or old grassland is ploughed up.

Most organic matter added to a soil decomposes as animals and micro-organisms feed on it. This process releases nutrients for crops to use.

SOM affects both the chemical and physical properties of a soil and its overall health by affecting soil structure, porosity, water infiltration rate and holding capacity, the diversity and biological activity of soil organisms and plant nutrient availability.



WHY THE INTEREST IN SOIL ORGANIC MATTER

- UK Soil organic matter content has decreased on average over the past 2 decades.
- There are positive economic benefits for farms where SOM is increased when levels have become depleted.
- Alternative sources of organic matter are now more widely available to farmers in the South West.
- SOM of agricultural soils has become a focus among politicians because of the importance of soil carbon in the global carbon cycle and the role it can play in climate change mitigation.

SOIL FUNCTIONS INFLUENCED BY SOIL ORGANIC MATTER:

- **Water retention**
- **Soil structural stability**
- **Soil porosity**
- **Nutrient retention**
- **Source of nutrients over time**

WHAT ARE THE PROS AND CONS OF IMPROVING SOIL ORGANIC MATTER BY APPLYING ORGANIC MANURES

PROS	CONS
-Provide nutrients NPK and micro nutrients -Maintain and improve soil structure - Improve soil workability reducing power and machinery costs -improve water holding capacity increasing growth during dry periods. -improve crop establishment due to better water and nutrient availability. -reduce water logging and increase the workability window and potentially grazing window. -Improved soil pH buffering potentially reduces liming requirements.	-Weeds can be a problem depending on source of organic matter. -Slugs have been reported to be a problem with varying organic manures.

WHICH ORGANIC MANURE TO CHOOSE

- Availability depends on location and type of farming as to which products are available.
- Depends on crop nutrient requirements, some are a good source of crop available nutrients, some release nutrients as they break down over time but act as a soil conditioner.
- In general organic material that has been composted acts as a soil conditioner and has useful quantities of phosphate and potash available in the first year but nitrogen availability in the first is very low. In contrast, organic materials that have been subject to anaerobic digestion have high available nitrogen quantities in the first year as well as useful quantities of phosphate and potash.
- Some wastes are approved for use on organic farms
- Restrictions, recording requirements and Environment Agency approval differ for different products.

BGS Nutrient Wise Demos are part of the South West Agricultural Resource Management (SWARM) Knowledge Hub www.swarmhub.co.uk , which is a SW RDA initiative, managed by Duchy College Rural Business School, and funded through the Rural Development Programme for England (RDPE).

European Agricultural Fund for Rural Development: Europe investing in rural areas.

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