

Yatesbury House Farm

Nr Calne, Wiltshire

Started Organic Conversion 1998 647 ha

Mostly Cereals 281 ha

Fertility building summer fallow and Fertility building clover leys

Pasture permanent 115 ha Woodland 36 ha

Aberdeen Angus Pedigree Suckler Herd 200 head Staff 2.5 plus me No Plough...









216 ha



Yatesbury House Farm

Rotation: NITROGEN BALANCE

1. Clover pasture hay, grazing

2. Clover pasture graze, manure applied

3. Clover pasture graze, hay, cultivate

- 4. Winter Wheat
- 5. Winter Wheat and Bean mix
- 6. Autumn/Spring fertility builder and summer fallow
- 7. Wheat
- 8. Winter Beans
- 9. Spring Barley

under sown with clover pasture

Yatesbury House Farm

Our soil type:

Silty clay loam, over lower chalk

Rain fall: 27-32 inches rain na

Here it is in good shape.



There is plenty of opportunity for slumping of soils or baking solid of wet soils.

The most important constituent of soil?

Worms and minibeasts?

Food and Water?





The most important constituent of soil?

With out food we live for weeks

Without water for days

Without air for minutes

Air

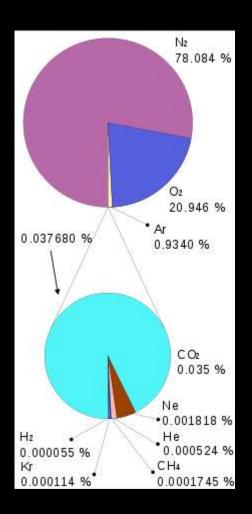


Diagram courtesy Wikipedia

As farmers we are constantly working with the soil and this often has detrimental effects, we need to work to repair the damage we have done through machinery and animal traffic.

About twice a rotation we gently lift the soil

Soil Rehabilitator
3m 130hp





let nature help

Increasing bio cultivations



25 or more varieties/species of herbs, legumes and grasses

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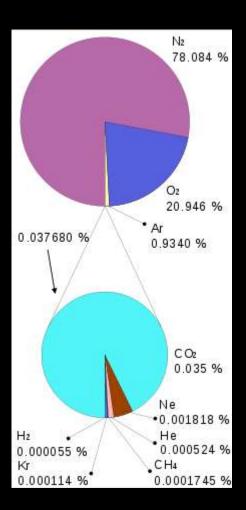


Diagram courtesy Wikipedia



Fixing nitrogen is about the bacteria taking N₂ from the (soil) air



Summer regrowth of pasture after hay making

Plant feeding

Figure 1

Nitrogen in stable soil material

Plant feeding through mycorrhizae
Plant drinking through transpiration

Plants only take up as much nitrogen as they need

and separately drink as much water

as they need

Balanced plants

Figure 2

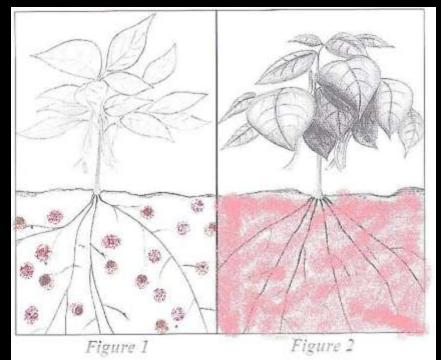
Nitrogen in soil water

Plants take up food through transpiration i.e. Force fed

This causes cell bloating Indicated by blue green leaf colour Leads to pest and disease access

bitterness in fruits/leaves

(see area a round cow pats which cows won't eat).



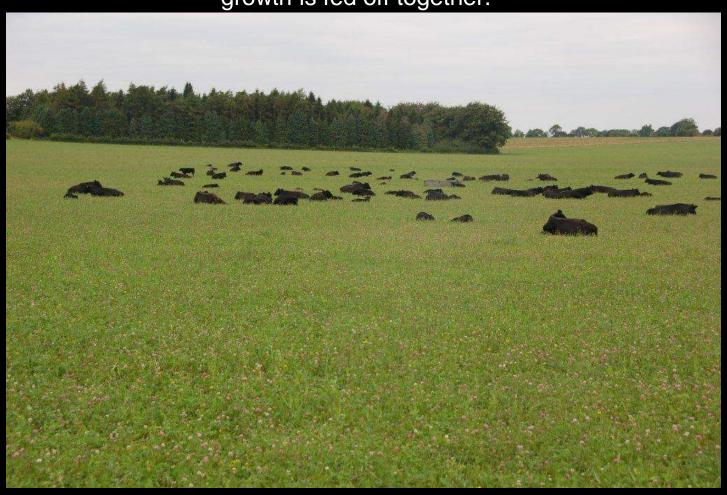
Spreading cow manure



Spreading cow manure:

let cows do the work as much as possible with rotational grazing Move cows every 6 days by electric fence.

This also ensures the plants don't regrow during that grazing period so all one growth is fed off together.



Cow pats contain soluble nitrogen (like bag nitrogen) which can over feed plants causing thin plant cell walls allowing access by pests and disease.

Spreading cow pats with the topper rollers or harrowing, prevents over feeding of plants.



Cow manure from straw littered barns

To compost

Composting will result in volatilisation of some nitrogen which always concerns me, keeping the manure turned and therefore the temperature not too high will help proper composting and produce a stable invaluable soil food.

We apply to a growing crop not to be harvested

Apply when showers forecast not hot sun (wash in the manure not burn it away)

Or not to compost

- Apply to actively growing crop which will not be harvested.
- Raw Manure fed to crops will produce bitter, pest prone crops.
- The free nitrogen (available in soil water) can be stabilised in a green crop (green manure) and used to feed the soil later by topping the crop.
- Avoid danger of leaching do not apply in cold wet periods

Plant feeding

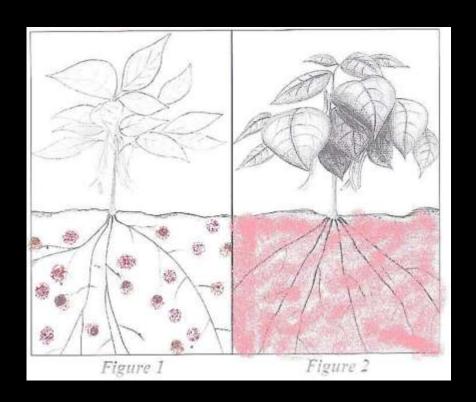
Figure 1

Nutrients in stable soil material

Figure 2

Nutrients in soil water

Balanced plants



Correct plant colour and expression, no blue green of conventional farming and a verticality / uprightness in the plants

Pasture pre cutting

Pasture regrowth





Other legumes are available...



Bi cropping Wheat and Beans









Mineralisation of Nitrogen from Cultivation/ aeration of the soil



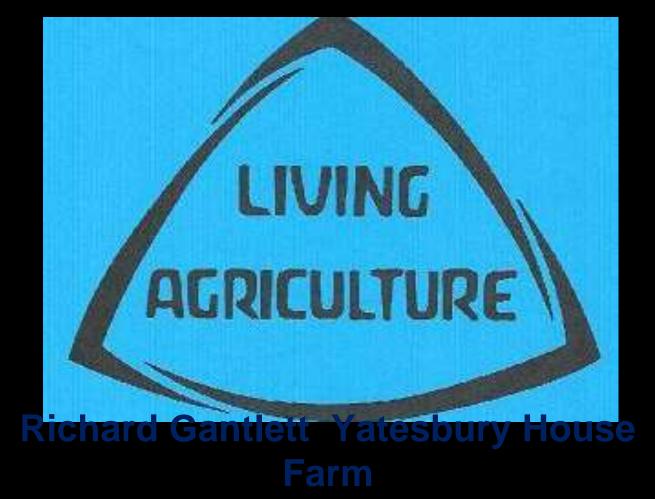
Spring malting barley, managing the rotation to best effect on nitrogen



Storage and Harvesting of Nitrogen







Conclusion of a farmer's tale:

Reduce losses and increase quality by stabilising soil N,
Reuse with bi cropping,

Recycle cow pats for healthy pasture,

Repair soil airways with lifting and bio cultivations