

Topic	Topic
Environment 	Socio-economic resilience 

Background
 The fertilisation with manure is a biological help for crops and it allows to lower the use of chemical fertilizers, but it can be a potential perturbation of the “soil-crop” system and it can lead to negative effects on the environment (soil, water and air) when it is not properly performed.
The following practice can minimize the side effects of the agronomic interventions and maximize the benefits.

How does it work?

1. Identify soil fertility needs through **SOIL ANALYSIS**, considering;
 General characteristics (e.g. USDA texture triangle, organic substance, organic carbon)
 Nutrient management (e.g. N, P₂O₅, K₂O, MgO, Ca, Mn, Na, Zn, B, Cl)
LEAF TEST (concentration of N, P, K, Ca, Mg, B, Fe, Mn, Cu, Zn).

2. Define the quantity of effluents to be applied on the soil or used for fertigation.



3. Ensure that the soil is in the right condition to avoid structural alterations of the soil with consequent decrease in fertility.
 Avoid applications with wet soil!



4. Minimize the length (time) of the application of fertilisers and their drift.
 Use machinery that minimises trampling, buries fast, and implements foliar application while avoiding drifts.

Be careful, especially on these points!
If all the previous 4 points are not fulfilled, soil fertility will be damaged!

Quote of a farmer:
'If you do not respect fertility, desertification is the risk!'

- Positive features**
- Positive influence on soil fertility, on a structural level, microbial level and nutritional level
 - Unnecessary/ excess inputs can be avoided
 - The treatment of the effluents and the application techniques positively impact on social, economic and environmental sustainability (e.g. smell)

- Specific advises**
- Tests on effluents improve precision nutrient application
 - Soil analysis must be performed each 5 years; leaf tests must be performed annually
 - Nitrogen is a resource in manure: losses (e.g. ammonia, N₂O to the atmosphere, NO₃ to groundwater) must be minimised!

