

## A kit to improve soil biological activity

In November 2017, Jean-Louis Reverter, fruit grower from France, was awarded the Pierre Sarazin Foundation innovation prize. Reverter has developed a kit to support farmers in their understanding of the biological activity of their soil, which is essential in improving soil stability and fertility. The kit can be used by farmers, and by the general public, to analyse samples of their soil.

### **Pierre Sarazin foundation –awarding innovation**

Every year the Pierre Sarazin foundation gives awards to people/organisations (in France and Belgium) who have developed agricultural techniques which are environmentally friendly, economically sound and which can be used by others. The 2017 winners were announced in November. Find out more on their website:

[www.fondationpierresarazin.fr](http://www.fondationpierresarazin.fr)

### **Drawing attention to soil biological activity**

Jean-Louis Reverter, fruit farmer from the south-east of France, noticed that after several generations of his fruit trees, the soils in his orchards had become less productive.

Maintaining soil biological activity and stability, as well as soil organic matter, protects soils from degradation, helps with carbon fixation and it is fundamental to ensuring soil fertility. A number of laboratory tests are currently available, but Jean-Louis found that the options for testing the soils on the farm, easily and at any time of year were limited. He also found there was a general lack of available information on the subject.

Passionate about agroecology, Jean-Louis began developing ways to test the soil biological activity on his farm, while applying sustainable agricultural practices. With his agricultural adviser Eric Navarro (from the CETA du Terroir de Crau), Jean-Louis wanted to pass this on to others, to find a way to get farmers, and the general public, interested in the biological properties and processes of their soil. So they produced a method called ABSol©.



### **An easy-to-use testing kit**

ABSol© is a kit consisting of a tool and methodology to measure the biological activity and stability of soil. It is practical, easy to use and the farmer can apply it directly on the farm at any point in the year directly. The method is based on the Slake test which can be done in laboratories, but this test can be done in the field.

The kit uses soil samples. The samples must be lumps of dry soil, they can come from any part of the farm at any point of the year and can be taken as often as required.

The tool includes sets of plastic containers. Each of the containers has a compartment with a perforated base which fits inside it. The container is filled with water at room temperature. The farmer puts the

sample of soil into the compartment. This compartment is inserted into the container and then lifted out so that the lump of soil is plunged in and out of the water. This is repeated 5 times.

The kit comes with a table of standard measurements, so that the farmer can draw results from the tests straight away. By analysing what remains of the soil after the test, "in 5 minutes you can understand the biological and structural stability of the soil sample" says Eric Navarro.

### Analysing the results

The test shows that the more the lump of soil breaks down in the water, the more unstable and the less 'alive' the soil is.

Eric explains "The stability is not only related to organic matter and clay content, it is related to soil biological activity. Soil biological activity leads to a better structure of the soil. The more fungi that are present, the more they secrete glomalins - glycoproteins - which form a biological glue, says Eric. Other living organisms, such as bacteria, also have the capacity to improve soil structure"



Using this method, farmers can better understand where and when they need to adapt their practices in order to protect the biological balance of their soils. "They can take informed measures to adapt the biological, agronomic and ecological characteristics of their soils" says Eric.

[Watch the video for more information.](#)

### Next steps

The table of standard measurements is not yet available for the whole of France, as the initial kit was developed for the south-east of the country. Jean-Louis and Eric are now counting on the dissemination of their kit and the collaborative participation of advisers and farmers to validate the method in other pedoclimatic conditions. The ABSol© kit is available for professionals and in garden centres. Eric clarifies "Our aim is not to compete with laboratory soil biological tests."

### Sources

<http://www.fondationpierresarazin.fr/actualite/nos-actus/jean-louis-reverter-2eme-prix-ex-aequo-2017>

<http://www.vertcarbhone.fr/methode-absol/>

<http://www.vertcarbhone.fr/kit-absol-une-video-de-presentation-realisee-lor-du-salon-techbio-de-valence/>

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