AgroSource IRRIGATION

Haney Test
Physico-Chemical Changes

Turfgrass
(April 2021 – September 2023)
Carbonic Acid treated water

The Haney Soil Health Test offers a more comprehensive look at the nutrient needs and overall health of your soil syste however, uses different soil extracts, namely H3A and H2O, to determine what quantity of these nutrients are available the crop and accessible to the microbes.

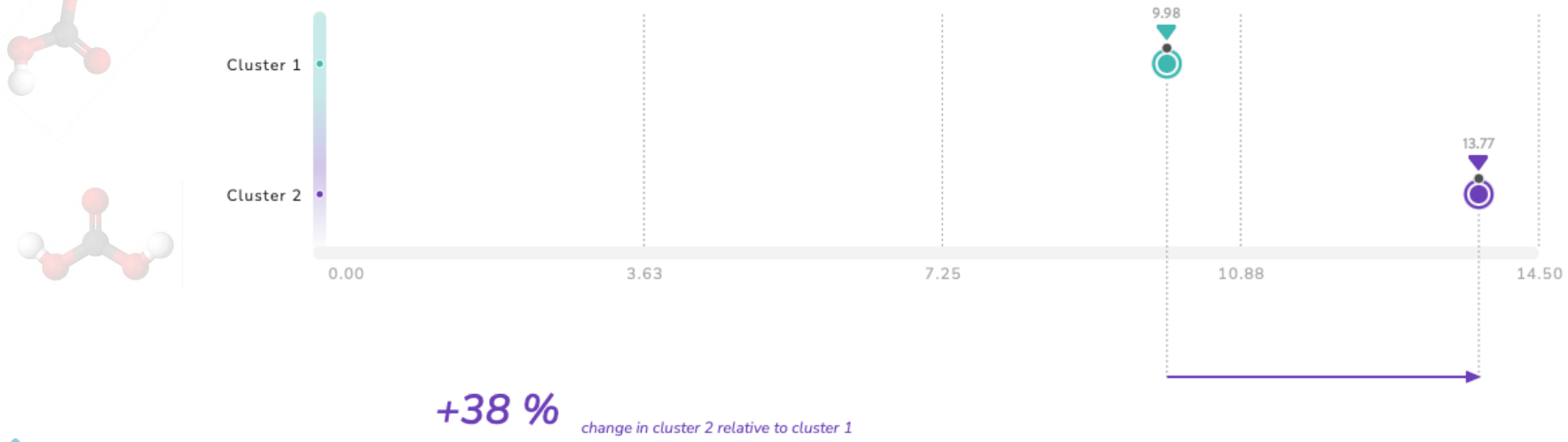


ECO2MIX®

BIOMEMAKER POWERED BY BECROP

ORGANIC C:N RATIO

The total water extractable organic C (WEOC) from your soil expressed in ppm. This pool of carbon is roughly 80 times smaller than total soil organic C pool (% organic matter) and reflects the energy/food source that is driving your soil microbes.



+38 % *change in cluster 2 relative to cluster 1*



ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES

ORGANIC MATTER (%) LOI

This is the total soil organic matter (SOM) expressed as percent loss on ignition (%LOI). SOM is made up mostly of organic carbon, but it also contains all other essential plant nutrients. We think of SOM as the house the microbes live in.



+21 % *change in cluster 2 relative to cluster 1*

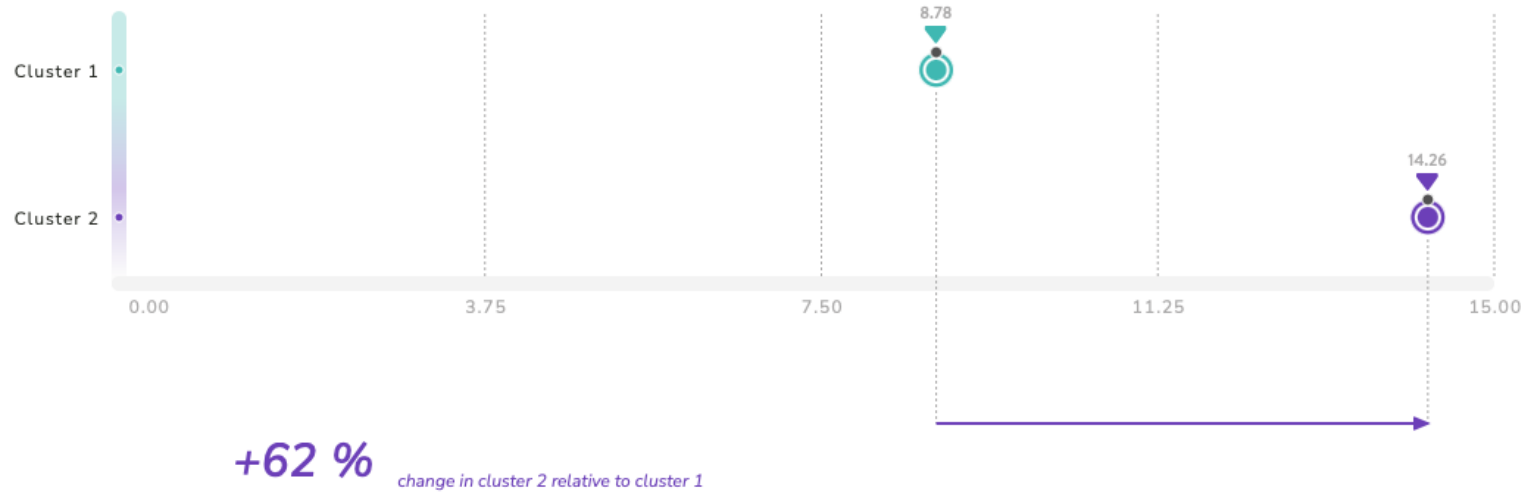


ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES

SOIL HEALTH SCORE

This number is calculated as soil respiration divided by 10 plus a weighted organic carbon and organic N addition. It summarizes the overall health of your system based on the indicators measured in the test.



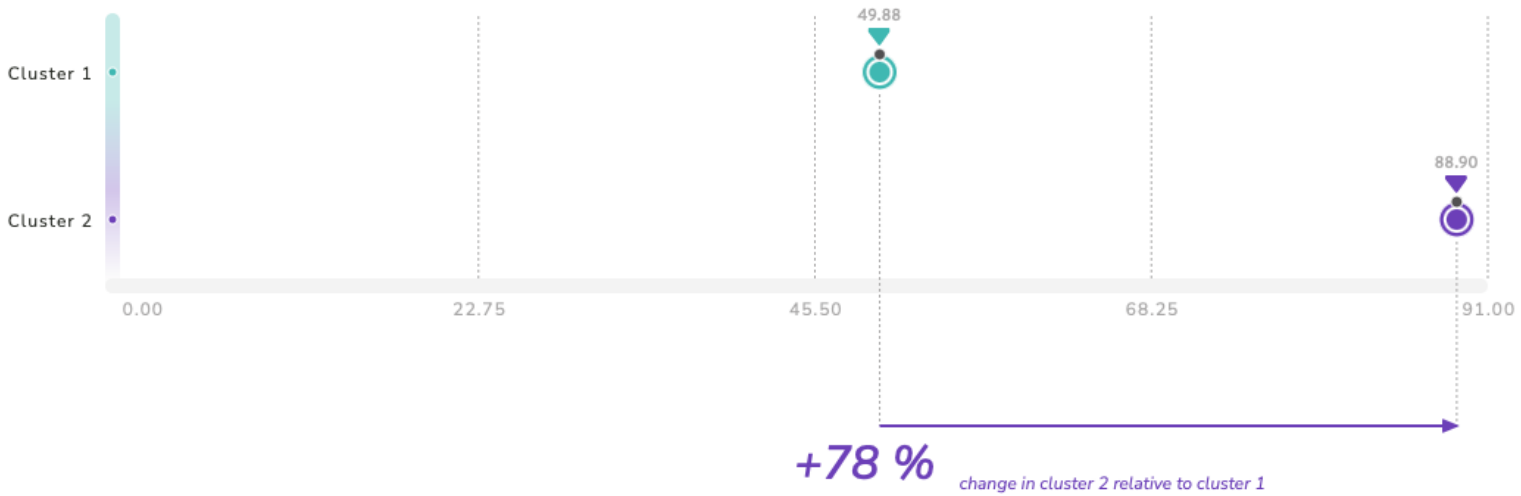
+62 % *change in cluster 2 relative to cluster 1*



PHYSICO-CHEMICAL CHANGES

SOIL RESPIRATION

The respiration test is aimed at measuring the amount of CO2-C a soil can produce over a 24hr incubation period following a significant drying and rewetting event. In other words, how much does your soil breathe when conditions are optimal? Most microbes produce CO2 through aerobic respiration just as we do and the more CO2 a soil produces the more life it contains or the higher the microbial biomass. This is important because it relates to a soil's potential for microbial activity, which is tied to many functions of a healthy soil such as nutrient cycling, soil aggregate and organic matter formation, disease suppression and stimulation of plant growth.



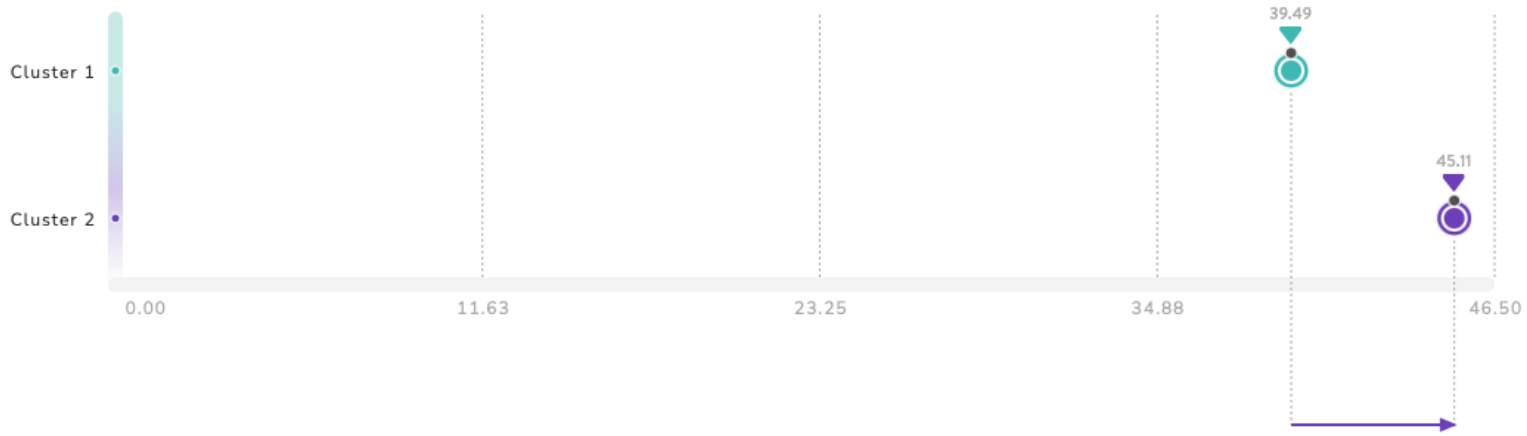


ECO2MIX®

PHYSICO-CHEMICAL CHANGES

MICROBIAL ACTIVE C

Microbially Active Carbon or %MAC is how much of the water extractable organic C was acted upon by the microbes.



+14 % *change in cluster 2 relative to cluster 1*

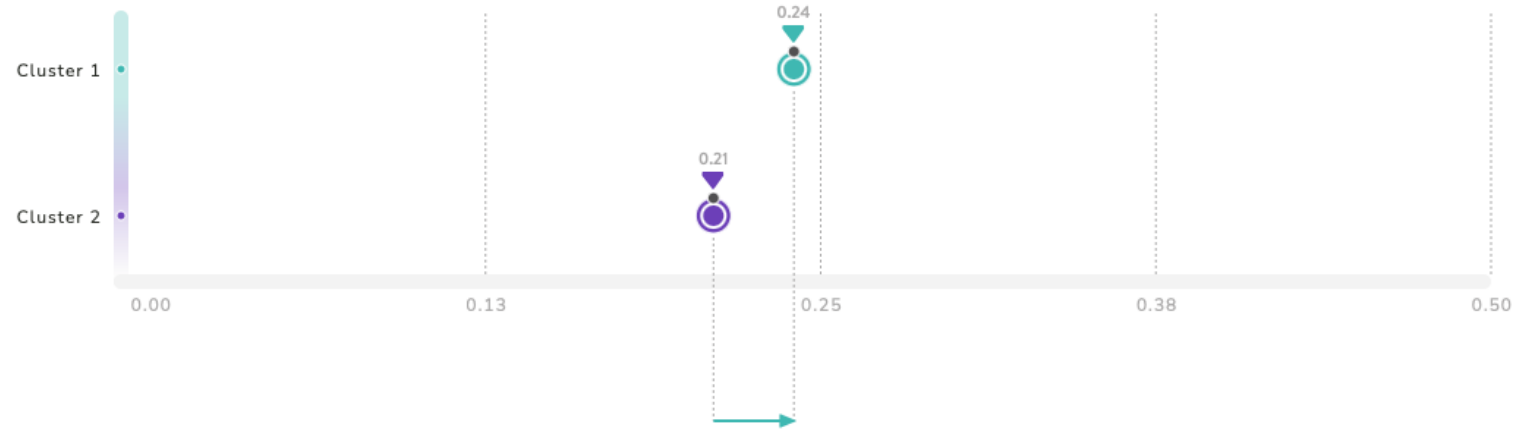


ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES

1:1 ELECTRICAL CONDUCTIVITY

A measure of the electrical conductivity (EC) of the soil based on the amount of soluble salts at a 1:1 ratio of soil and water expressed as mmho/cm.



-12 % *change in cluster 2 relative to cluster 1*

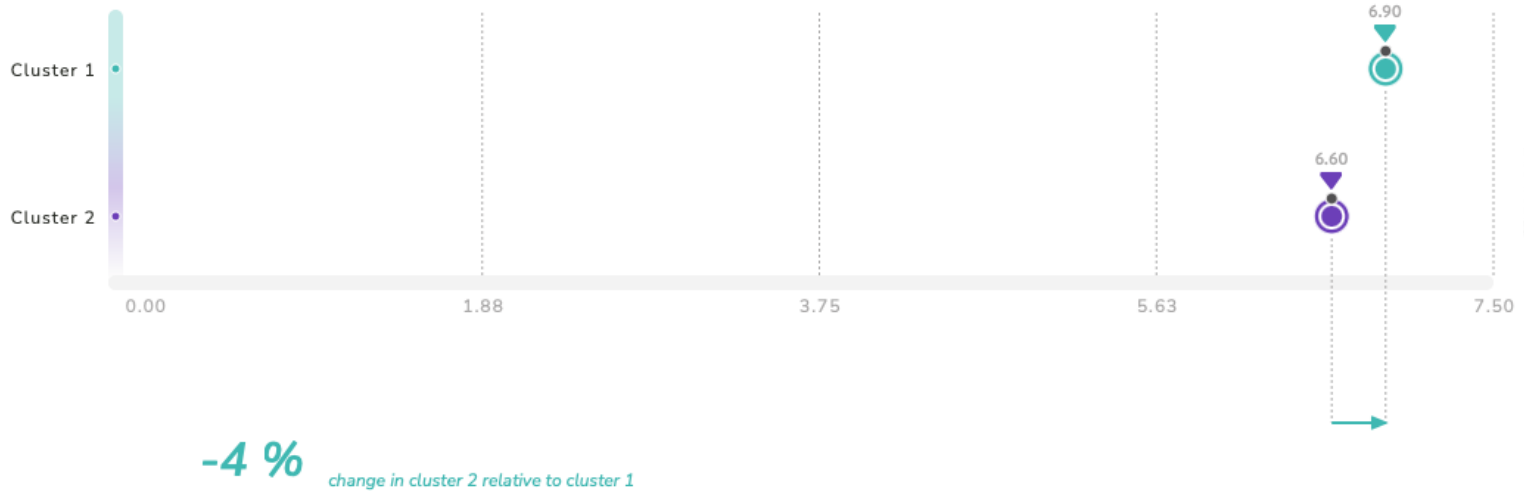


ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES

1:1 SOIL pH

The pH of the soil using a 1:1 ratio of soil and water.



-4 % *change in cluster 2 relative to cluster 1*

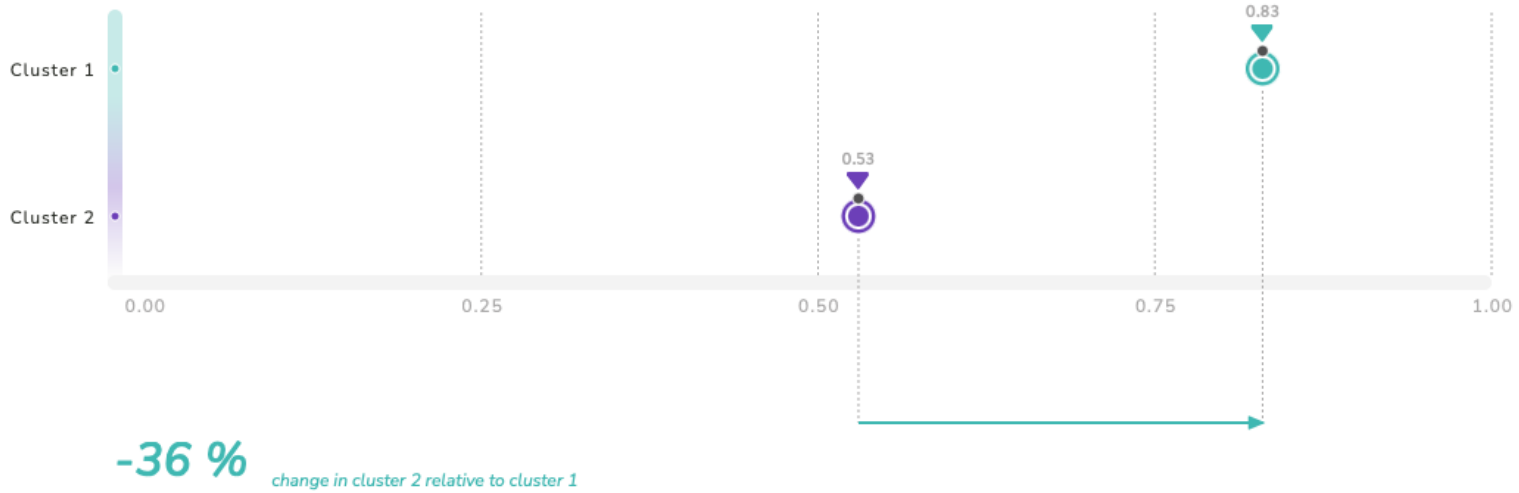


ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES

ORG N: INORG N RATIO

This is the ratio of organic N to inorganic N in your soil. Soils that are reliant on fertilizer inputs typically have a lower amount of organic N and a higher amount of residual inorganic N.



-36 %

change in cluster 2 relative to cluster 1

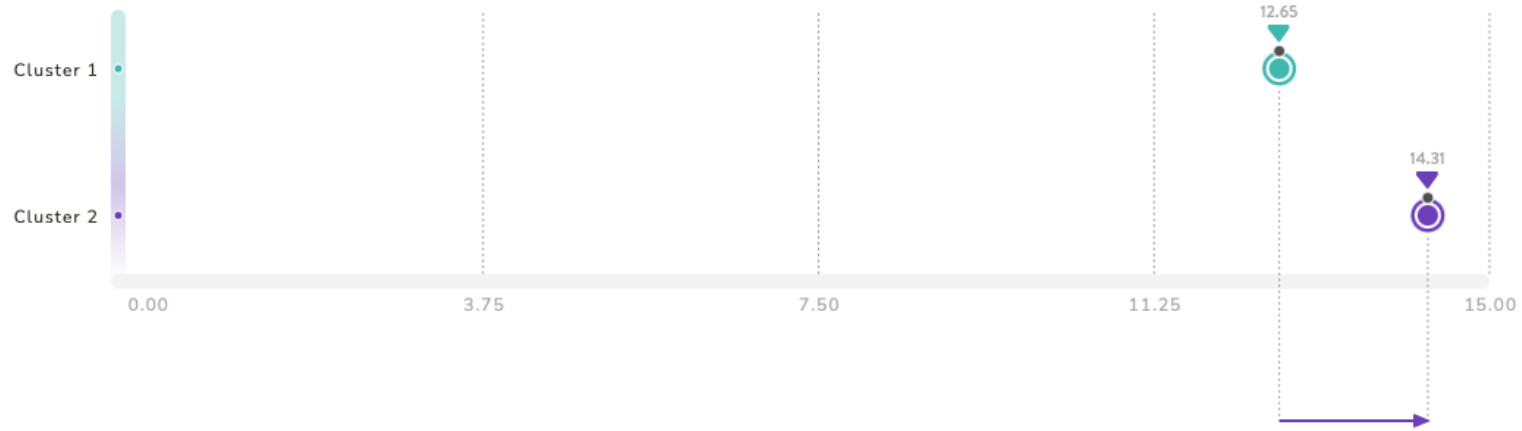


ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES

ORGANIC N RELEASE (ppm)

The total amount of nitrogen being released through microbial activity from the organic N pool expressed as ppm N. The N released here is counted as a credit to the next crop and is subtracted from recommendations made on the Haney Test.



+13 % *change in cluster 2 relative to cluster 1*

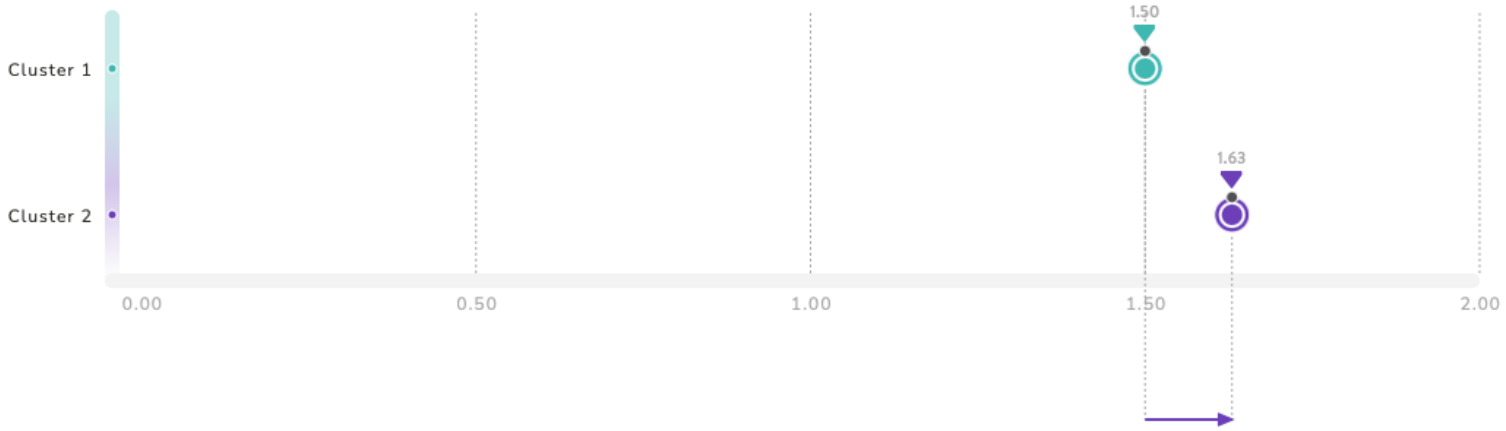


ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES

AMMONIUM-N H3A (ppm)

The amount of NH4-N extracted from your soil using H3A extractant expressed in ppm N.



+9 % *change in cluster 2 relative to cluster 1*

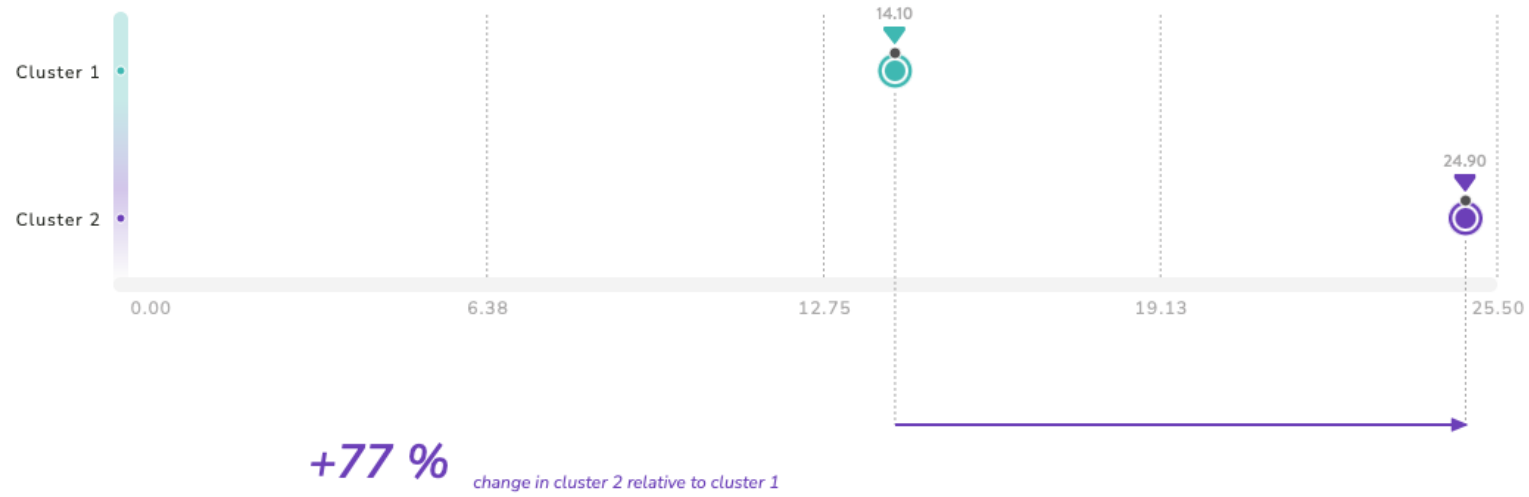
ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES



NITRATE-N H3A (ppm)

The amount of NO3-N extracted from your soil using H3A extractant expressed in ppm N.



+77 %

change in cluster 2 relative to cluster 1

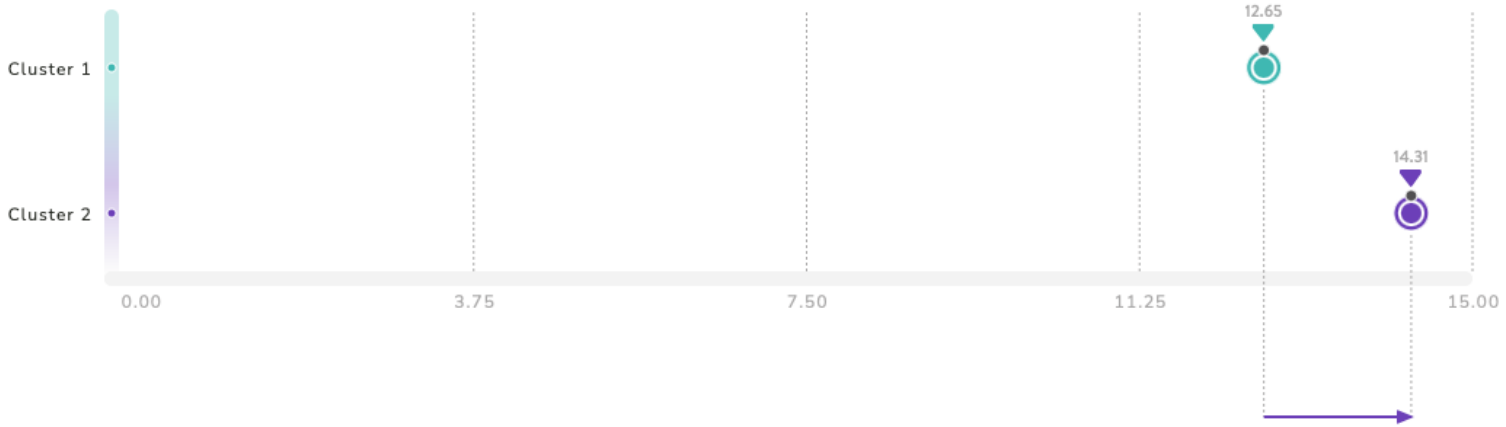


ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES

ORGANIC NITROGEN (ppm)

Organic N is the total water extractable N (WEN) minus inorganic N (NO3 and NH4) in ppm. The organic N pool is replenished by fresh plant residues, manure, composts, and dying soil microbes.



+13 % *change in cluster 2 relative to cluster 1*

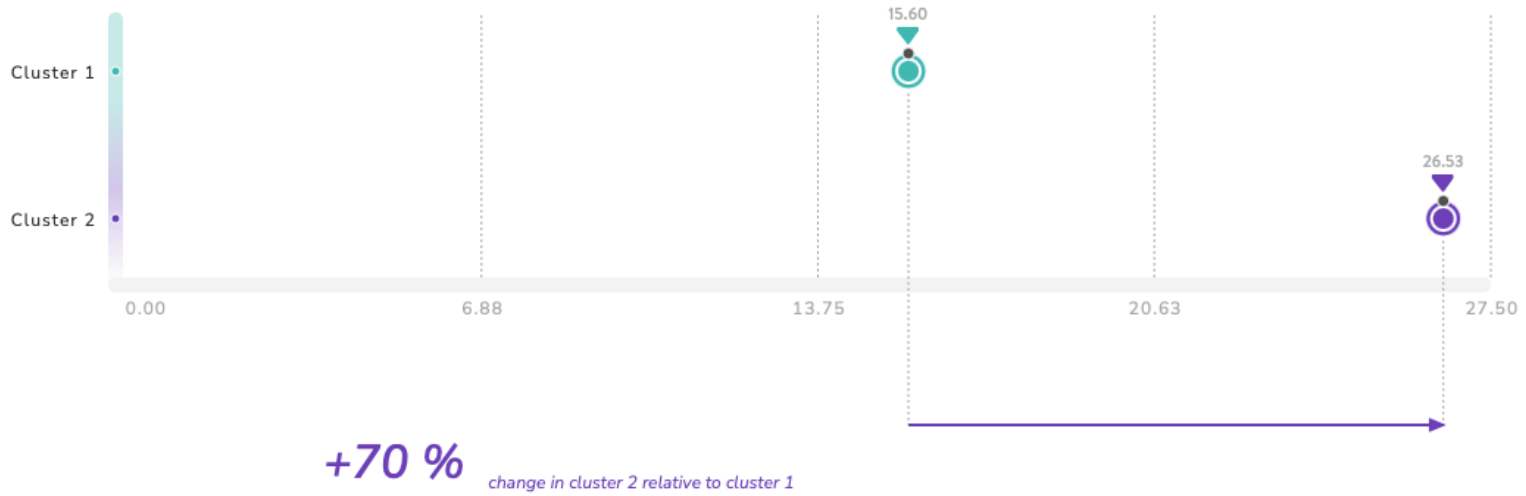


ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES

INORGANIC N : H3A (ppm)

This is a sum of the NO3-N and NH4-N expressed in ppm N.



+70 % *change in cluster 2 relative to cluster 1*

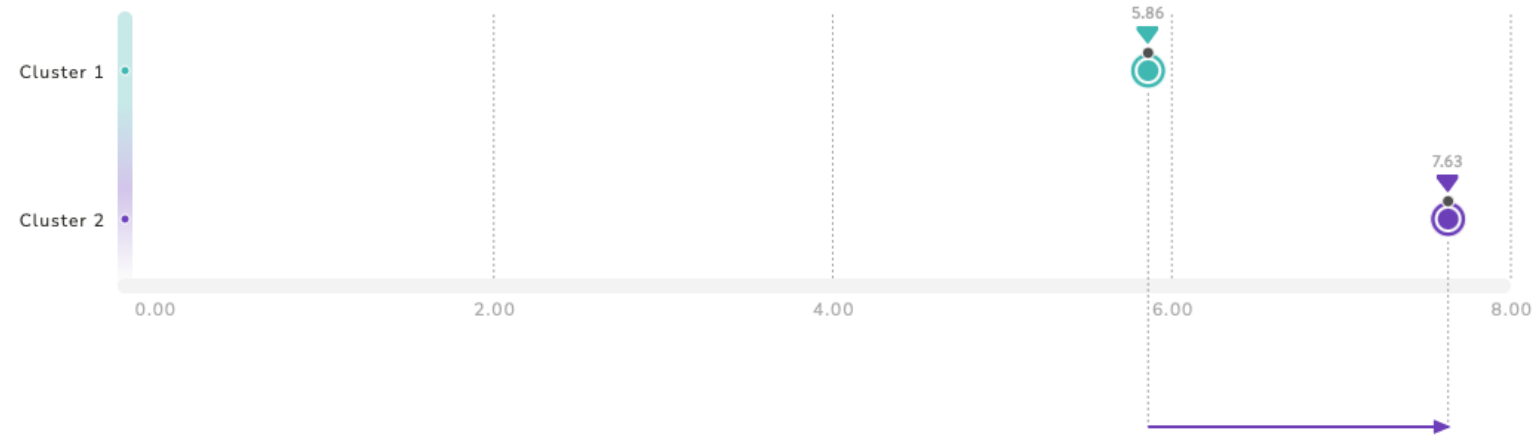


ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES

ORGANIC P H3A (ppm)

Total P is the amount of elemental P in your soil extracted with H3A and analyzed on ICAP in ppm P.



+30 % *change in cluster 2 relative to cluster 1*

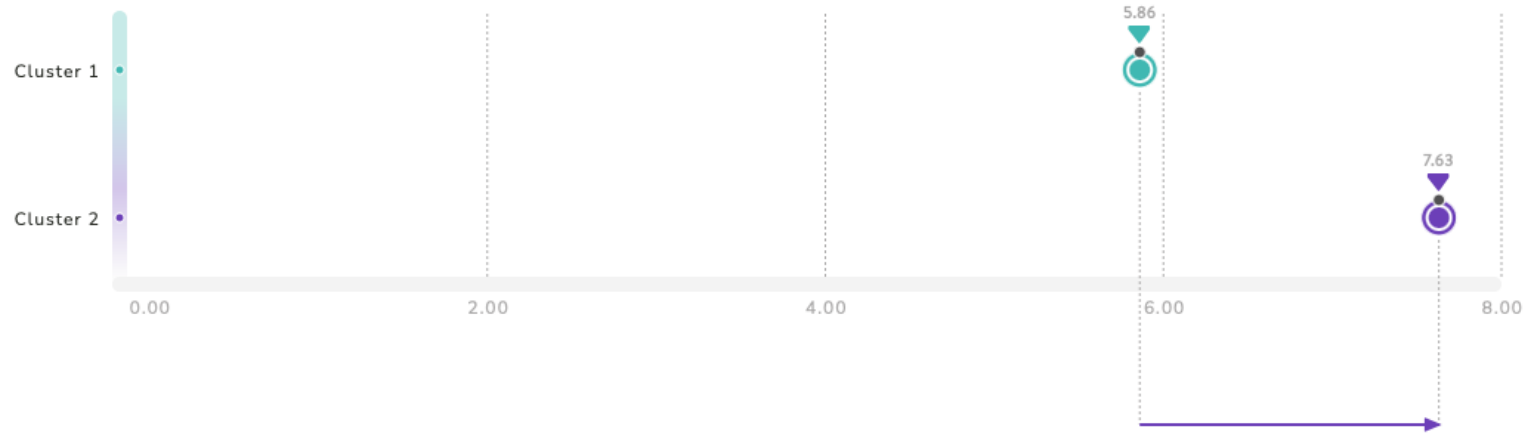


ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES

ORGANIC P RELEASE (ppm)

The amount of phosphorus that will be released through mineralization of organic P by soil microbes depending on their abundance and the organic C : organic N ratio expressed in ppm P.



+30 % *change in cluster 2 relative to cluster 1*

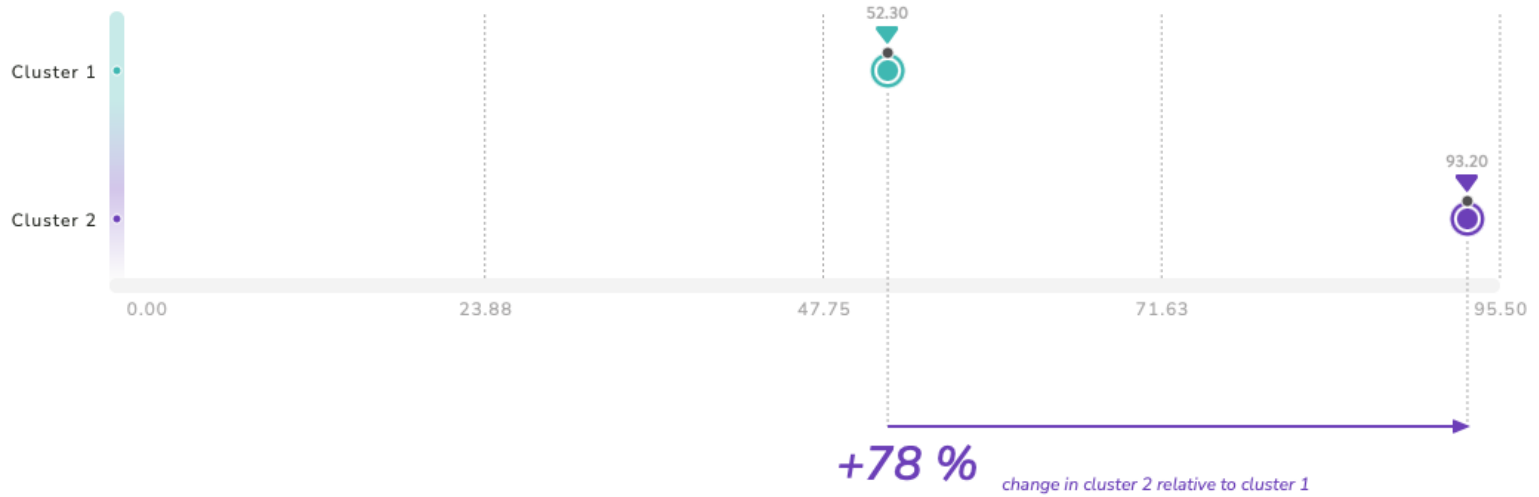


ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES

INORGANIC P H3A (ppm)

The amount of P in your soil extracted with H3A and measured as orthophosphate (PO4-P) expressed in ppm P.



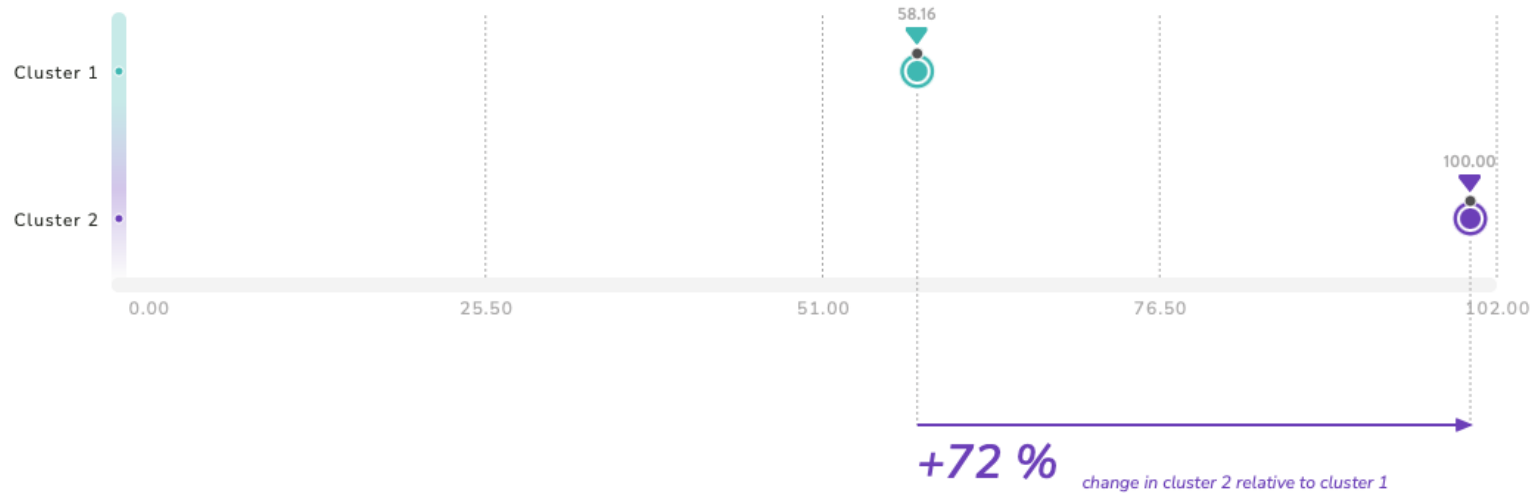


ECO2MIX®

PHYSICO-CHEMICAL CHANGES

TOTAL PHOSPHORUS (ppm)

Total P is the amount of elemental P in your soil extracted with H3A and analyzed on ICAP in ppm P.



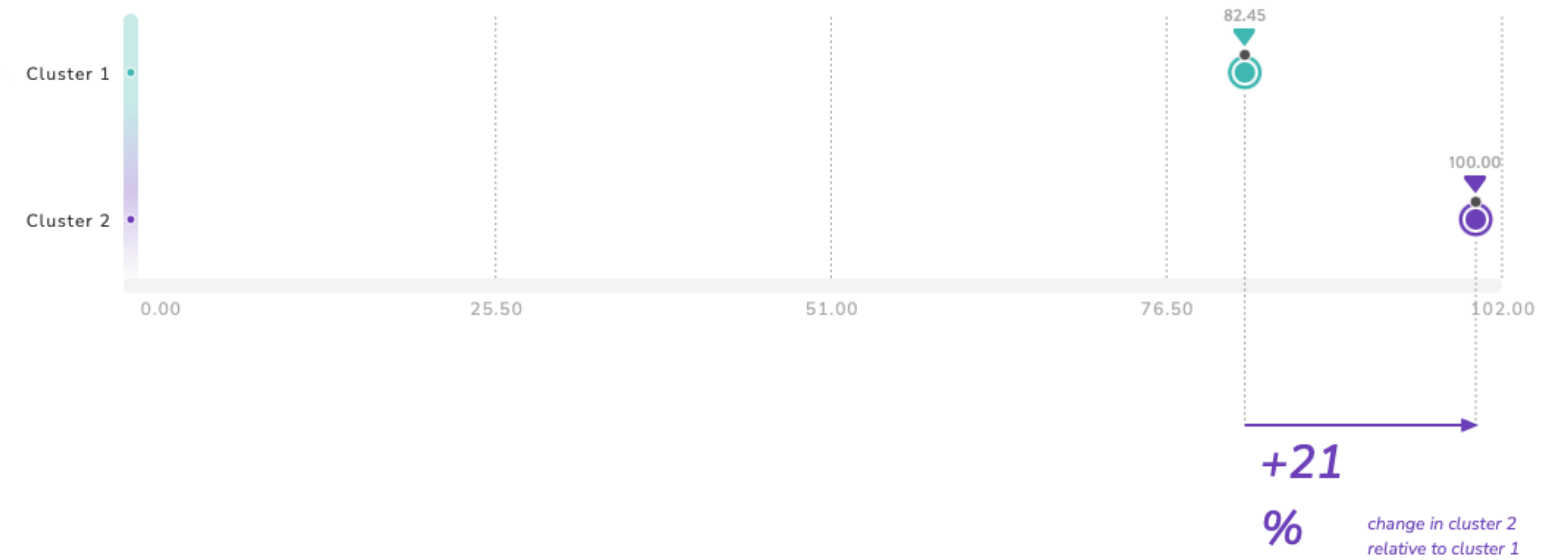


ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES

POTASSIUM H3A (ppm)

Is the total elemental K extracted with H3A from your soil expressed as ppm K.





ECO2MIX®

PHYSICO-CHEMICAL CHANGES

ZINC H3A (ppm)

Is the total elemental Zn extracted with H3A from your soil expressed as ppm Zn.



+18 % *change in cluster 2 relative to cluster 1*

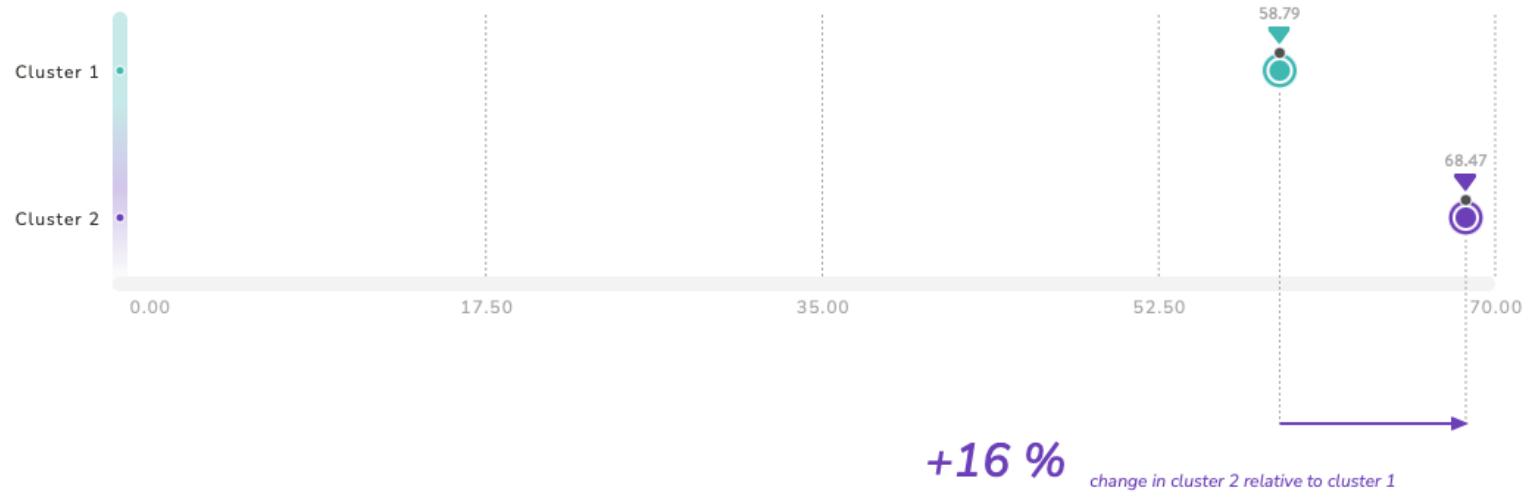


ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES

MAGNESIUM H3A (ppm)

Is the total elemental Zn extracted with H3A from your soil expressed as ppm Zn.



+16 % *change in cluster 2 relative to cluster 1*



ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES

MANGANESE H3A (ppm)

Is the total elemental Mn extracted with H3A from your soil expressed as ppm Mn.



-35 % *change in cluster 2 relative to cluster 1*

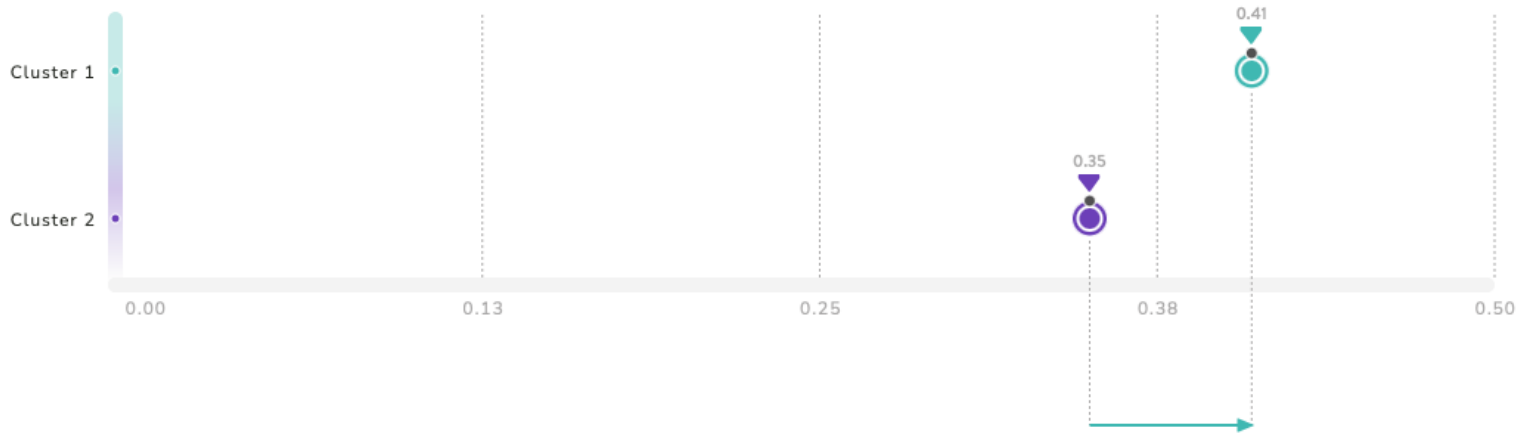


ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES

COPPER H3A (ppm)

Is the total elemental Cu extracted with H3A from your soil expressed as ppm Cu.



-15 % *change in cluster 2 relative to cluster 1*



ECO$_2$MIX®

PHYSICO-CHEMICAL CHANGES