



# MICROBE ACTIVITY WISE

Microbe Activity Wise measures the potential microbial activity in your soil. It measures the amount of carbon dioxide (CO<sub>2</sub>) produced by microbes over 24 hours to calculate potential microbial activity, soil basal respiration (SBR) and soil microbial biomass carbon (SMBC). These results allow you to assess your soil's capacity for total microbial activity under ideal conditions. In general, higher activity is linked to better soil health because of the wide variety of important soil processes performed by beneficial microbes.

## Key features

- Easy to understand
- Fast turnaround\*
- Low cost\*

## Ideal for:

- Basic overview of potential soil microbial activity
- Introduction to soil microbiology measurement
- Combination with Microbe Wise for a complete biomass/activity picture

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\*compared to other Microbe Labs tests

## Info level\*



## COLOUR CODED RESULTS FOR EASY UNDERSTANDING

All results are colour coded based on guide values for easy recognition.

### Key

Poor Fair Good

## COMMENTS AND EXPLANATIONS

Each report comes with comments and explanations designed to help you understand your results.

## MORE INFO?

Customised reports with detailed comments and recommendations are also available as an optional extra. See price list for more info.

**Microbial Activity Indicator**

	Yours	Guide
Microbial activity indicator	62.0	80.0
Soil Basal Respiration (7-28 day)	1153.7	1520.0
Soil Microbial Biomass C	4227.4	5569.6
Soil Microbial Biomass C	334.5	463.6

**Comments (Detailed Custom Report available - see Order Form)**  
Microbial activity was fair to good. However, by creating conditions that are more favourable to microbial activity, such as by increasing soil carbon, this level could be improved.

**Explanations**  
The Microbe Activity Wise test measures activity of soil microbes directly from your sample. It measures the amount of carbon dioxide (CO<sub>2</sub>) emitted by microbes over time to calculate microbial activity, soil basal respiration (SBR) and soil microbial biomass carbon (C) (SMBC). Most soil microbes under aerobic conditions (the state of soil) should be in use oxygen to convert carbohydrates into energy and CO<sub>2</sub> gas, which they emit as a waste product. Just like animals, plants and humans. This rate is used to calculate the microbial activity indicator (0 to 100) based on known values for soils. Scientists published in scientific journals also used to convert this rate into soil basal respiration (SBR, 7-28 day) and soil microbial biomass C (SMBC). CO<sub>2</sub> concentration in atmosphere surrounding many crops is often a limiting factor (if not high enough) to optimal plant production (crop growth). So, plants use to take in CO<sub>2</sub> are located on both sides of the leaf (stomata) tend to have more on the underside. Therefore, plants use the CO<sub>2</sub> emitted by soil microbes as it rises from the soil. Having a good level of microbial activity in your soil not only helps soil processes, but can also help to improve crop growth. Always compare your results with a control sample. Guide values are included as a help, but because a large number of factors affect microbiology the guide levels may not be optimal for your specific conditions. Visit [www.microbelabs.com.au](http://www.microbelabs.com.au) for more information.

**Disclaimer**  
Microbiology Laboratories Australia Pty Ltd ACN 145 073 481. The information in this report should be used under consideration of particular production conditions. The guide levels are derived from published data and ongoing research carried out by Microbiology Laboratories Australia. They are intended as a general guide only and do not take into account your specific conditions. Comparison of results with those obtained using other methods may be inaccurate. Interpretation of results using other methods, including laboratory methods, and in enterprises or regions will not be liable for any loss or damage arising from the use of the information supplied in this report. Please seek specific guidance and recommendations from a qualified agricultural professional.

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INFO SHEET

## Microbial Activity Indicator



## MICROBIAL ACTIVITY INDICATOR

The Microbial Activity Indicator allows you to see at a glance how active your soil is compared to our guide. The guide is an overall indication and represents a typical value that could be obtained in a naturally highly productive soil. It doesn't take your particular soil type into account, so it's important not to be overly concerned if your result doesn't match the guide. The most important thing is to compare your result with results from your control sample, or other samples, to gain an understanding of how different soils and practices influence your results over time.

### For the technically-minded

The Microbial Activity Indicator is a relative, unit-less value on a 0 to 100 scale, where 0 represents no microbial activity and 80 represents a typical value that could be obtained in a naturally highly productive soil. This typical value has been estimated from results published in scientific journals and Microbe Labs' own extensive experience at measuring soils using the CO<sub>2</sub> respiration method over more than a decade. For further technical information see: [soilquality.org.au](http://soilquality.org.au). Soil Tests, Microbial Activity; Franzuebbers et al. (1996), SSSAJ 60:113-1139; Franzuebbers et al. (2000), SSSAJ 64: 613-623; Paul (Ed.) (2014), Soil Microbiology, Ecology and Biochemistry (4th ed.).

## RESPIRATION & BIOMASS

In Microbe Activity Wise, **Soil Basal Respiration (SBR)** refers to the rate of CO<sub>2</sub> produced by microbes in equilibrium in undisturbed soil, under ideal conditions. **Soil Microbial Biomass Carbon (SMBC)** refers to the amount of carbon contained within all the microbes living in the soil under ideal conditions. Both are estimated by correlation from the CO<sub>2</sub> measured in Microbe Activity Wise.

Item		Yours	Guide
Soil Basal Respiration (7-28 day)	mg C/kg soil	1153.7	1520.0
	mg CO <sub>2</sub> /kg soil	4227.4	5569.6
Soil Microbial Biomass Carbon	mg C/kg soil	334.5	463.6

### For the technically-minded

Microbial respiration and biomass are affected by soil water, temperature and carbon content, and factors that influence them, such as soil type. Climate (particularly rainfall) and management practices. Most of the microbial biomass and activity in the soil occurs in the top 10cm and is usually limited below 20cm. For further technical information see: [soilquality.com.au](http://soilquality.com.au). Fact Sheets, Microbial Biomass; Olinger et al. (1996), Soil Respiration, Methods in Soil Biology 93-110.

## NEED HELP?

We have expert advisors available to help you understand and interpret your report, and provide advice and recommendations if you need them. Book a time on our website today!

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