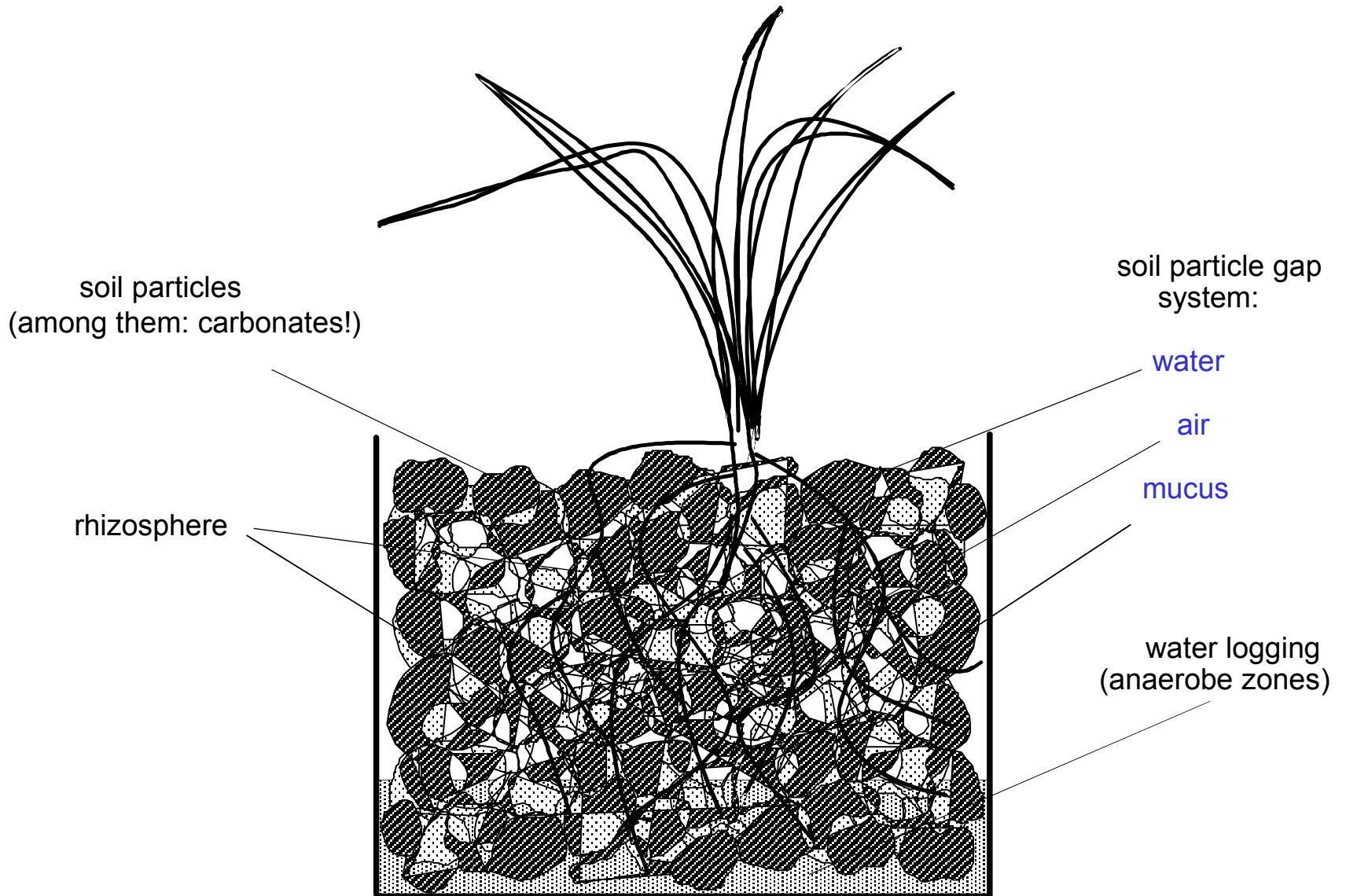


# Bodenatmungs- und Substratnutzungsmessungen

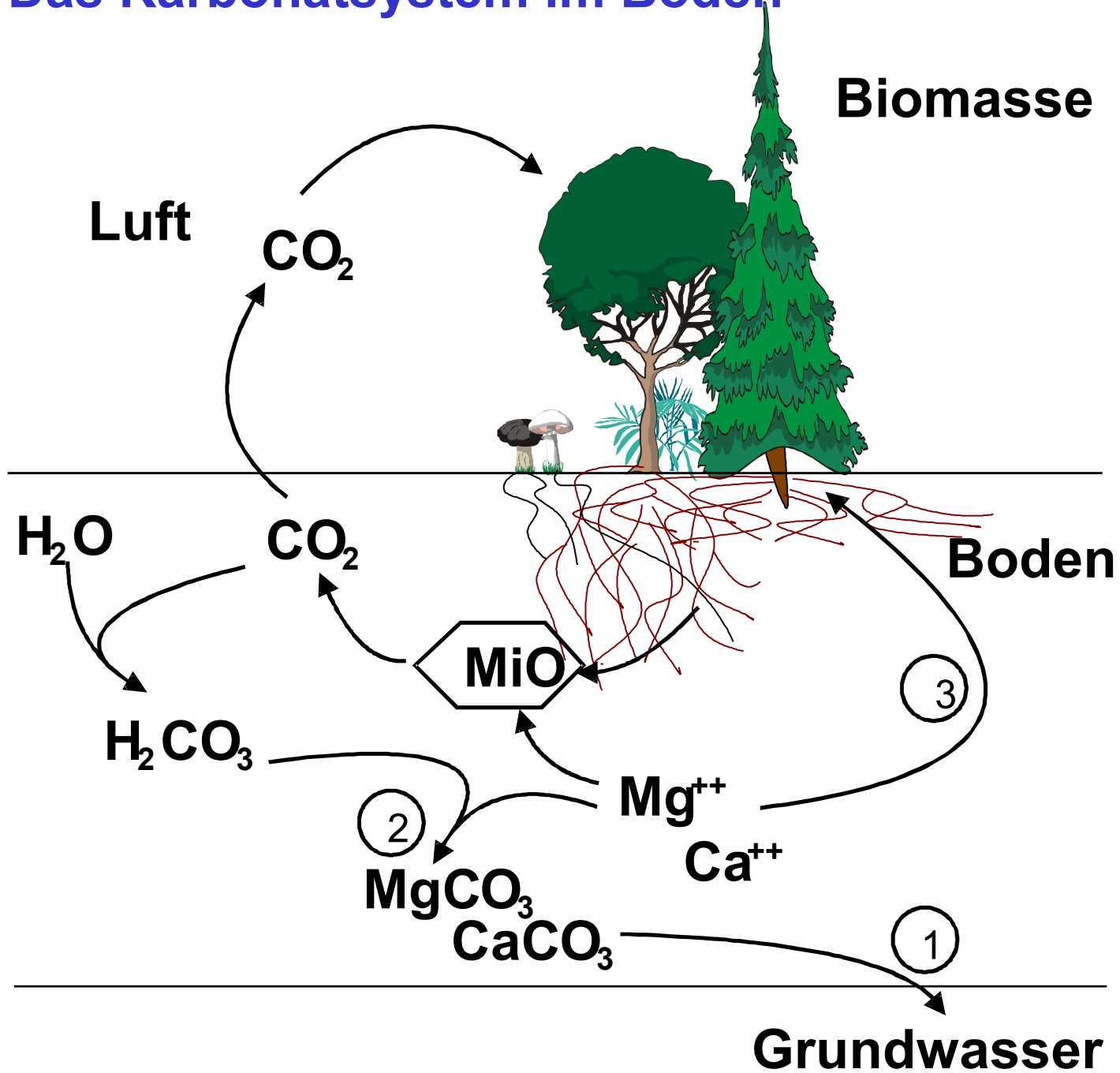
WS09

- Mikrohabitate, Entstehung von CO<sub>2</sub> in Böden
- Messmethoden: MicroResp, Isermeyer, IRGA
- Aussagekraft für Systemzusammenhänge

# Microhabitate im Boden



# Das Karbonatsystem im Boden



# MicroResp Messsystem

## D. The MicroResp™ Procedure in Brief



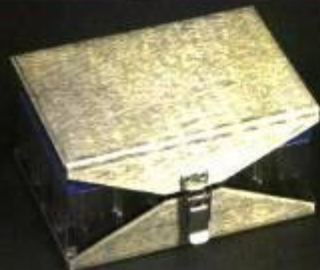
- 1 Place filling device over deepwell plate and fill with soil.



- 2 Remove sliding perspex sheet to allow soil to fall into deepwell plate.



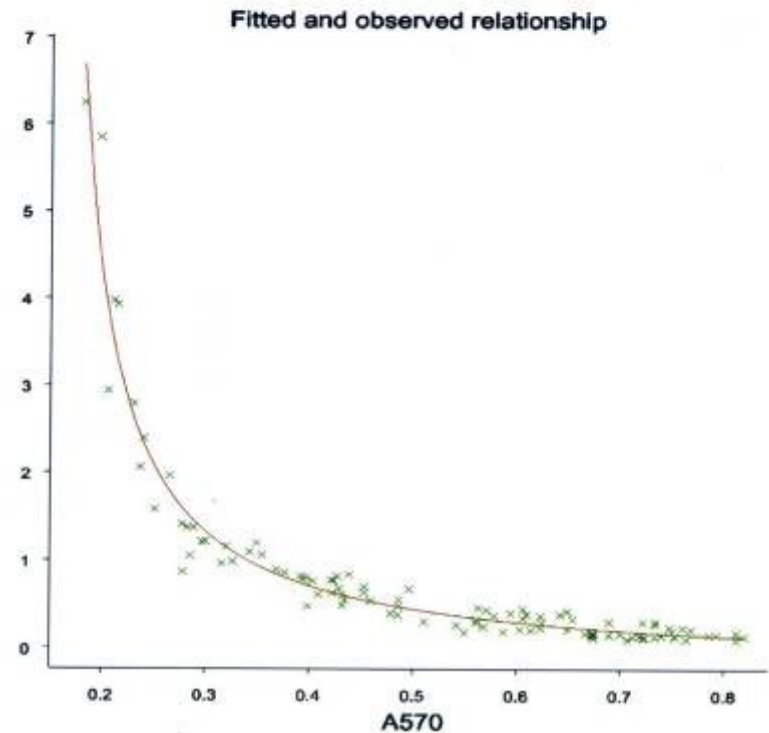
- 3 Read detection plate at 570 nm (0 hrs) and assemble onto the deepwell plate with the MicroResp™ seal.



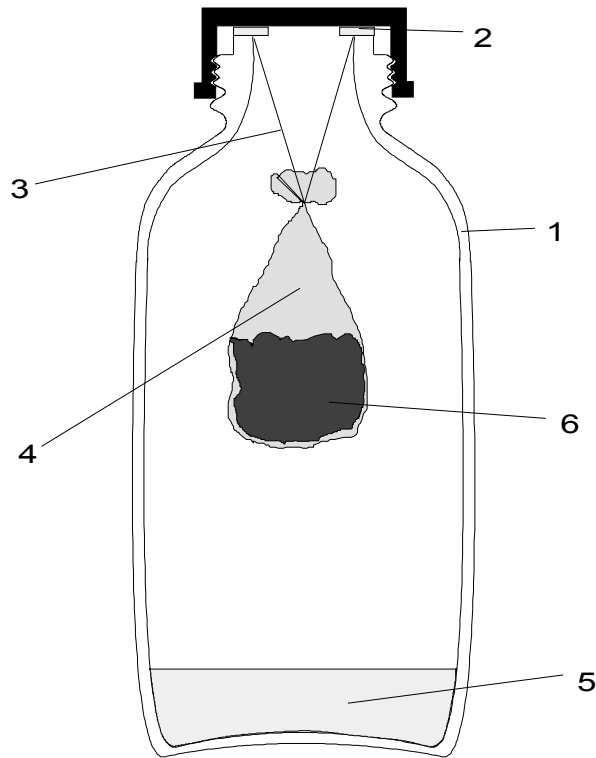
- 4 Place in metal clamp and incubate at 25°C for 6 hrs before re-reading detection plate at 570 nm.

### (v) Calibration of MicroResp™

The MicroResp™ system requires calibration for individual laboratories to take into account different spectrophotometers, different types of environmental samples, and incubation conditions. The conversion of Absorbance to %CO<sub>2</sub> is a non-linear relationship and the best fitted curve (regression analysis) is used to obtain the formula and parameters.



# Rücktitration nach Isermeyer (1952)

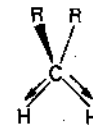


- 1... Schott-Flask
- 2... Sealing
- 3... Nylon Thread
- 4... Small Bag from Nylon Mesh
- 5... Sodium hydroxide
- 6... Soil

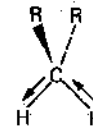
# IRGA (Infra Rot Gas Analyse)

## 14.2. Molekülschwingungen

### Strackschwingungen

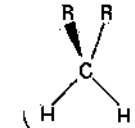


a) symmetrisch

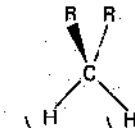


b) asymmetrisch

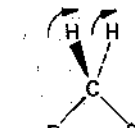
### Deformationsschwingungen



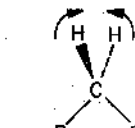
a) Scherschwingung (in der Ebene)



b) Pendelschwingung (in der Ebene)



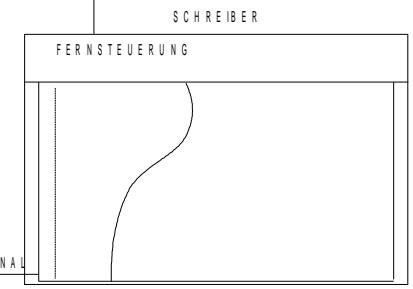
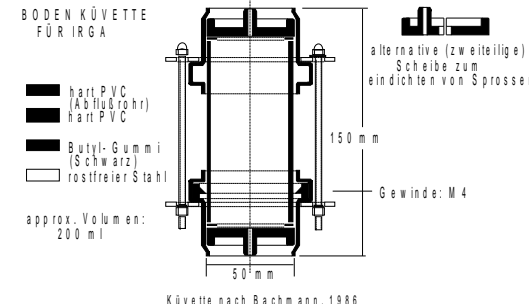
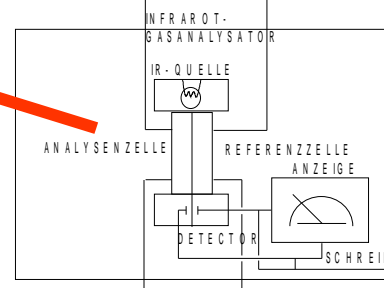
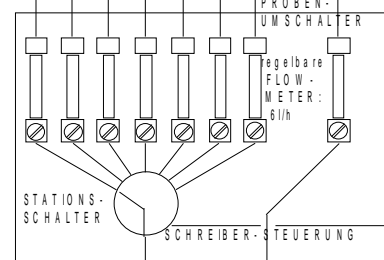
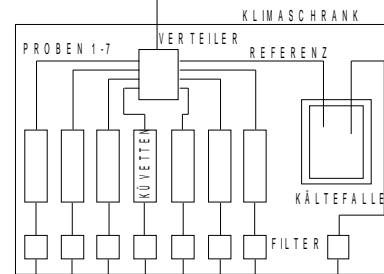
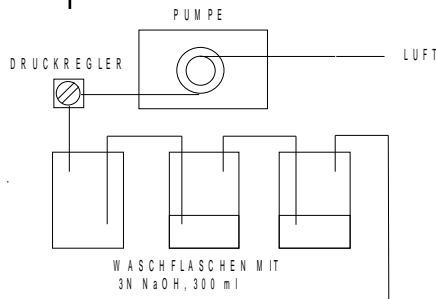
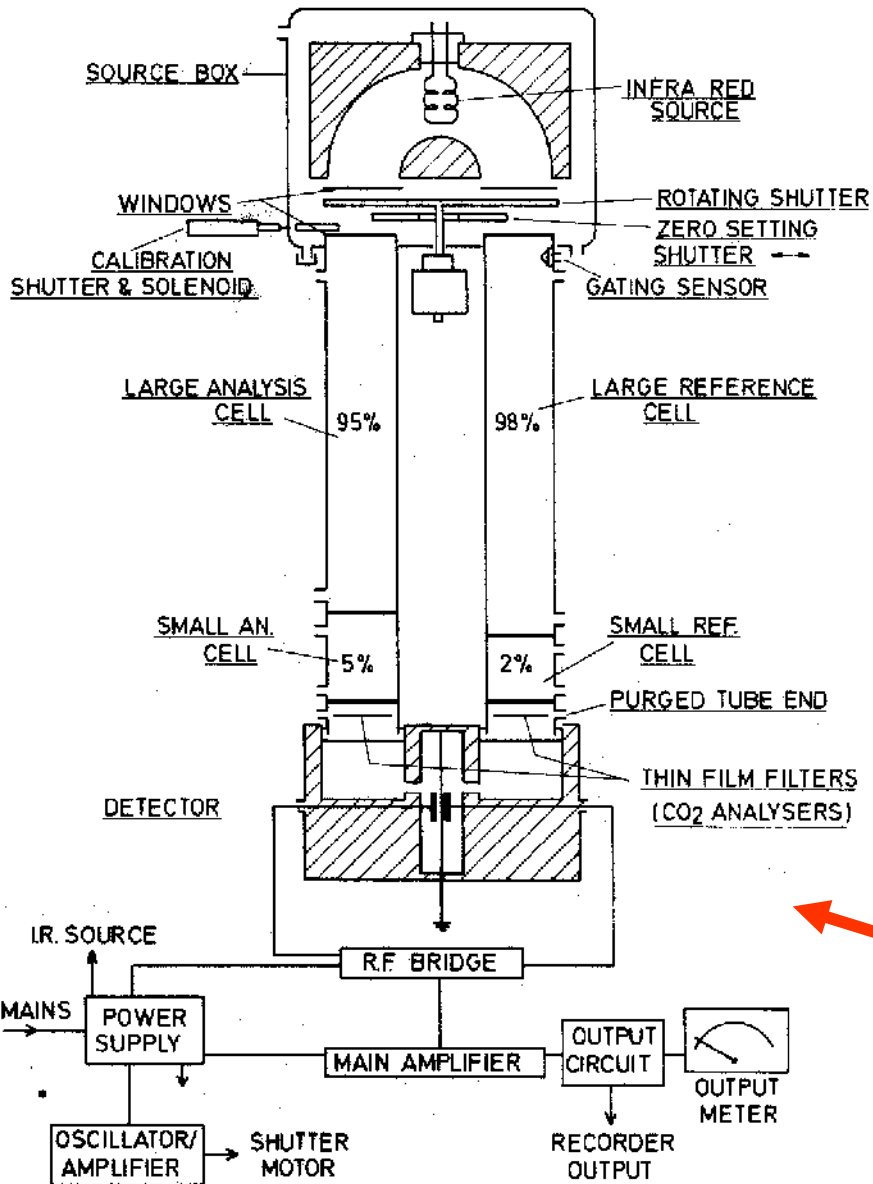
c) Kippschwingung (aus der Ebene)



d) Torsionsschwingung (aus der Ebene)

Abb. 14-4. Einige Schwingungsarten der Methylengruppe.

## CO<sub>2</sub> MODEL

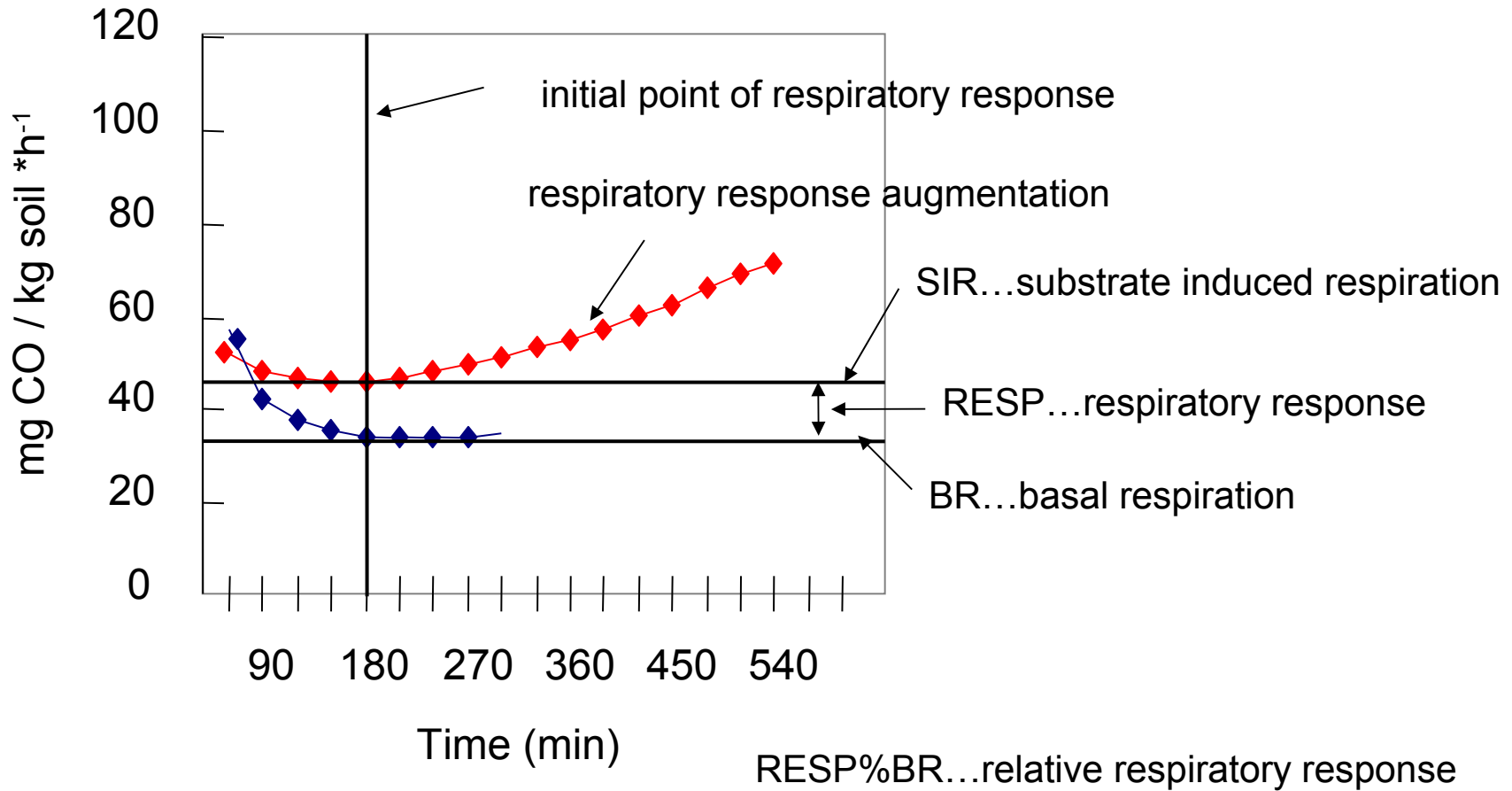


Versuchsanordnung nach Bachmann und Baumgarten, 1986

2b-3-7x1 95% & 98% CELLS ENTRY ADDED

**FIG 1** SCHEMATIC DIAGRAM I.R. ANALYSER TYPE 225 MK 3 ISS. 1  
THE ANALYTICAL DEVELOPMENT CO. LTD.

# Messpraxis mit IRGA im offenen Kreislauf BR, SIR, RESP



# Mikrobielle Aktivität und Biomasse

