



EUCAST

European Committee
on Antimicrobial
Susceptibility Testing

***Bacillus* spp.**

Calibration of zone diameter
breakpoints to MIC values

Version 2.4
January 2026

Bacillus spp.

MIC and zone diameter correlates

- The following histograms present inhibition zone diameter distributions from EUCAST antimicrobial susceptibility testing. In most, the different colours of the bars indicate different MIC values. In some, the colours of the bars indicate a resistance gene or a resistance mechanism.
- The distributions include data for wild-type isolates and for isolates with acquired resistance mechanisms. A large number of isolates with MIC values close to the edge of the wild-type distribution and/or close to EUCAST clinical breakpoints were intentionally included. These distributions can not be used to infer resistance rates or the performance of the tests with routine isolates.
- For some agents, isolates were tested on more than one occasion, including parallel tests with disks and media from several manufacturers. When this is the case, data are presented as both the “number of isolates tested” and the “total number of MIC-zone diameter correlates”, including replicate tests and parallel tests with disks and media from different sources.

Bacillus spp.

Materials and methods

- Antimicrobial susceptibility testing was performed on a collection of 152 clinical isolates of *Bacillus* spp. Disk diffusion was performed according to EUCAST methodology for non-fastidious microorganisms and MIC determination was performed with broth microdilution.
- The distributions of MIC vs. zone diameter in this presentation are the result of a collaboration between EUCAST; University Hospital of Wales, Cardiff (UK); Kres, Tromsø (Norway); Karolinska University Hospital, Stockholm (Sweden) and Clinical Microbiology, Linköping (Sweden).
- This presentation is based on EUCAST Clinical Breakpoint Tables v. 16.0.

Bacillus species

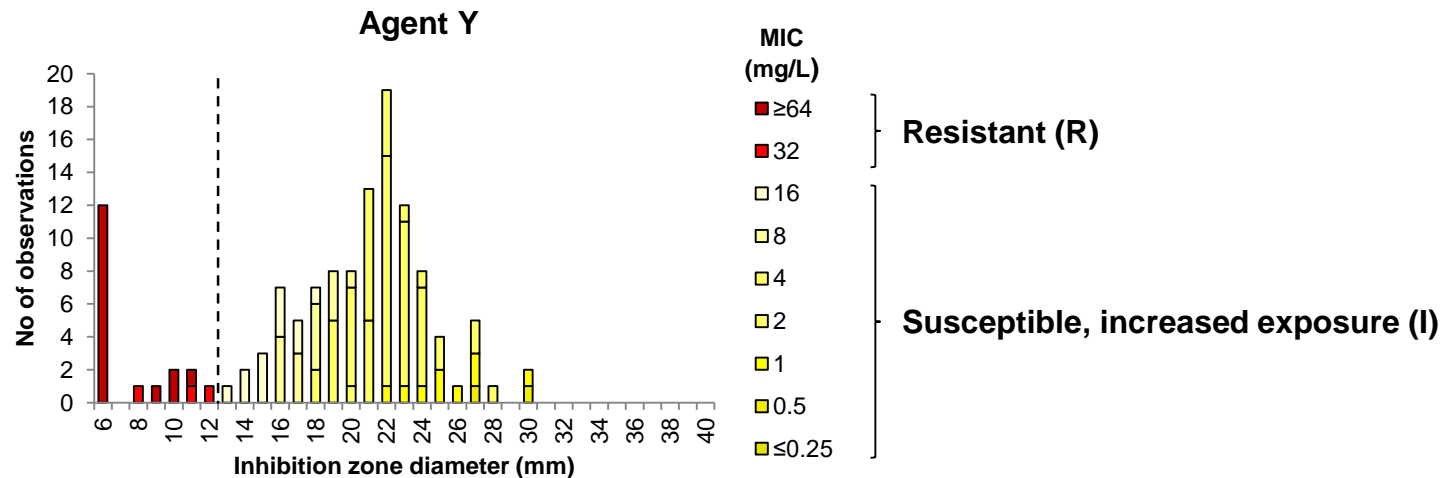
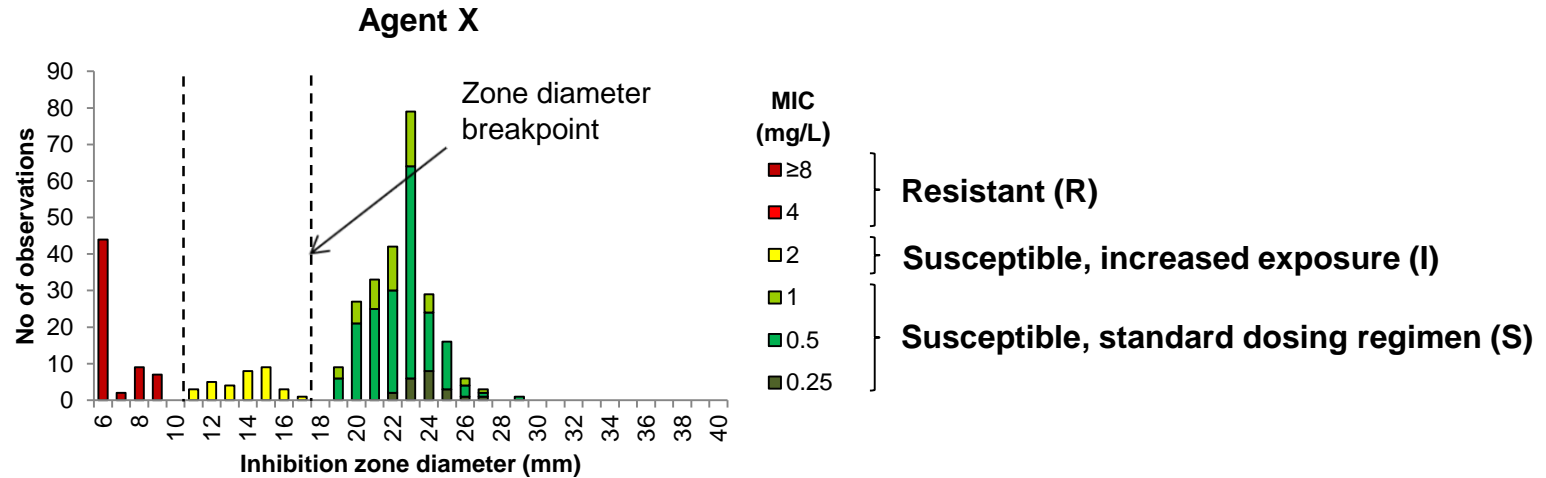
- 152 clinical isolates:
 - *B. cereus* (n=110)
 - *B. pumilus* (n=8)
 - *B. thuringiensis* (n=8)
 - *B. licheniformis* (n=6)
 - *B. mycoides* (n=5)
 - *B. simplex* (n=3)
 - *B. mojavensis* (n=2)
 - *B. subtilis* (n=2)
 - *B. weihenstephanensis* (n=2)
 - *B. badius* (n=1)
 - *B. circulans* (n=1)
 - *B. horneckiae* (n=1)
 - *B. megaterium* (n=)
 - *B. oceanisediminis* (n=1)
 - *B. sonorensis* (n=1)

Changes from previous version (2.3)

Changes
<ul style="list-style-type: none">• No changes. Breakpoints checked against latest version of EUCAST Clinical Breakpoint Tables.

Explanation of graphs:

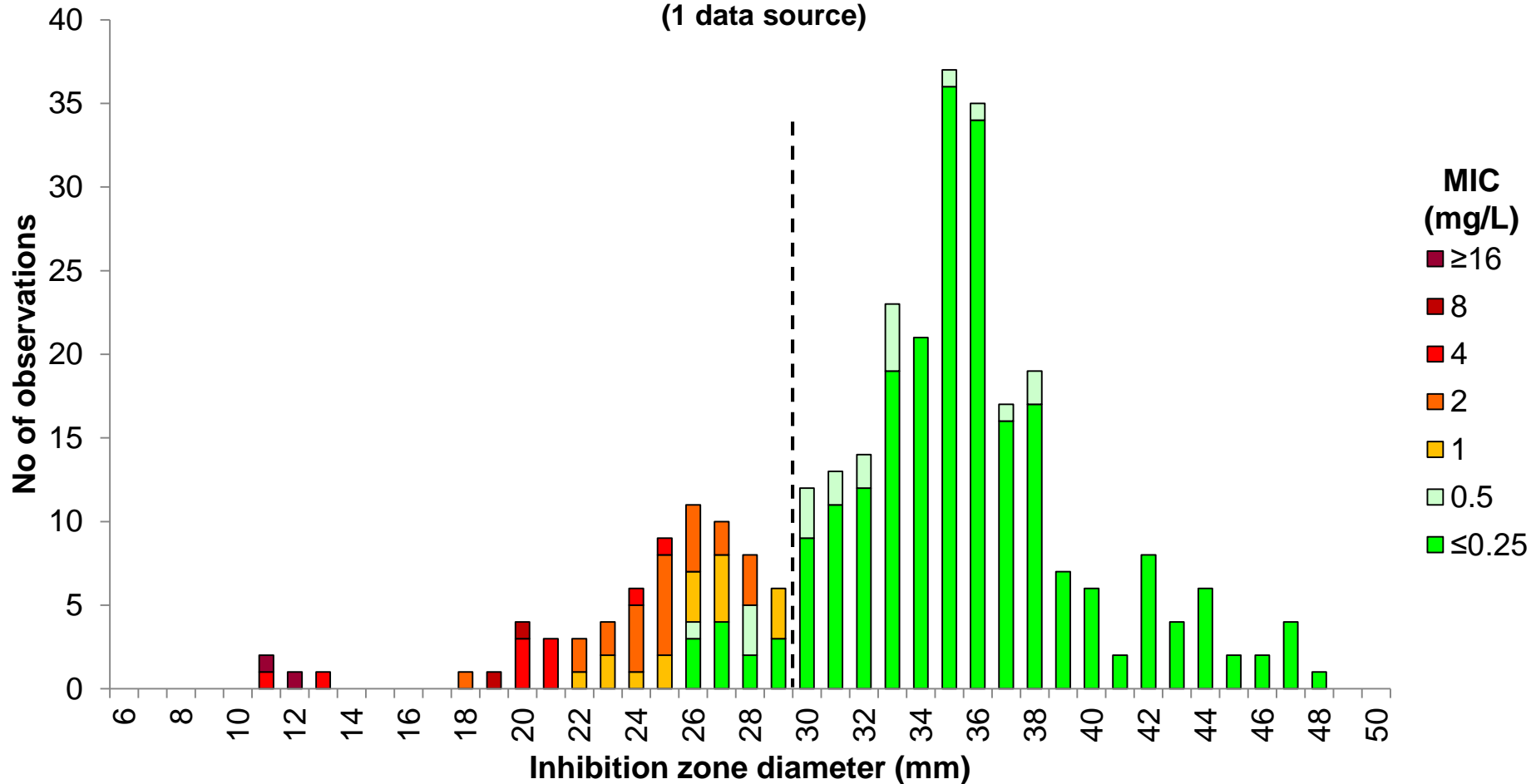
- These graphs show zone diameter distributions with MIC values or resistance mechanisms as coloured bars. Colours are related to current EUCAST MIC breakpoints.



Imipenem 10 µg vs. MIC

Bacillus spp., 152 isolates (303 correlates)

(1 data source)



Breakpoints

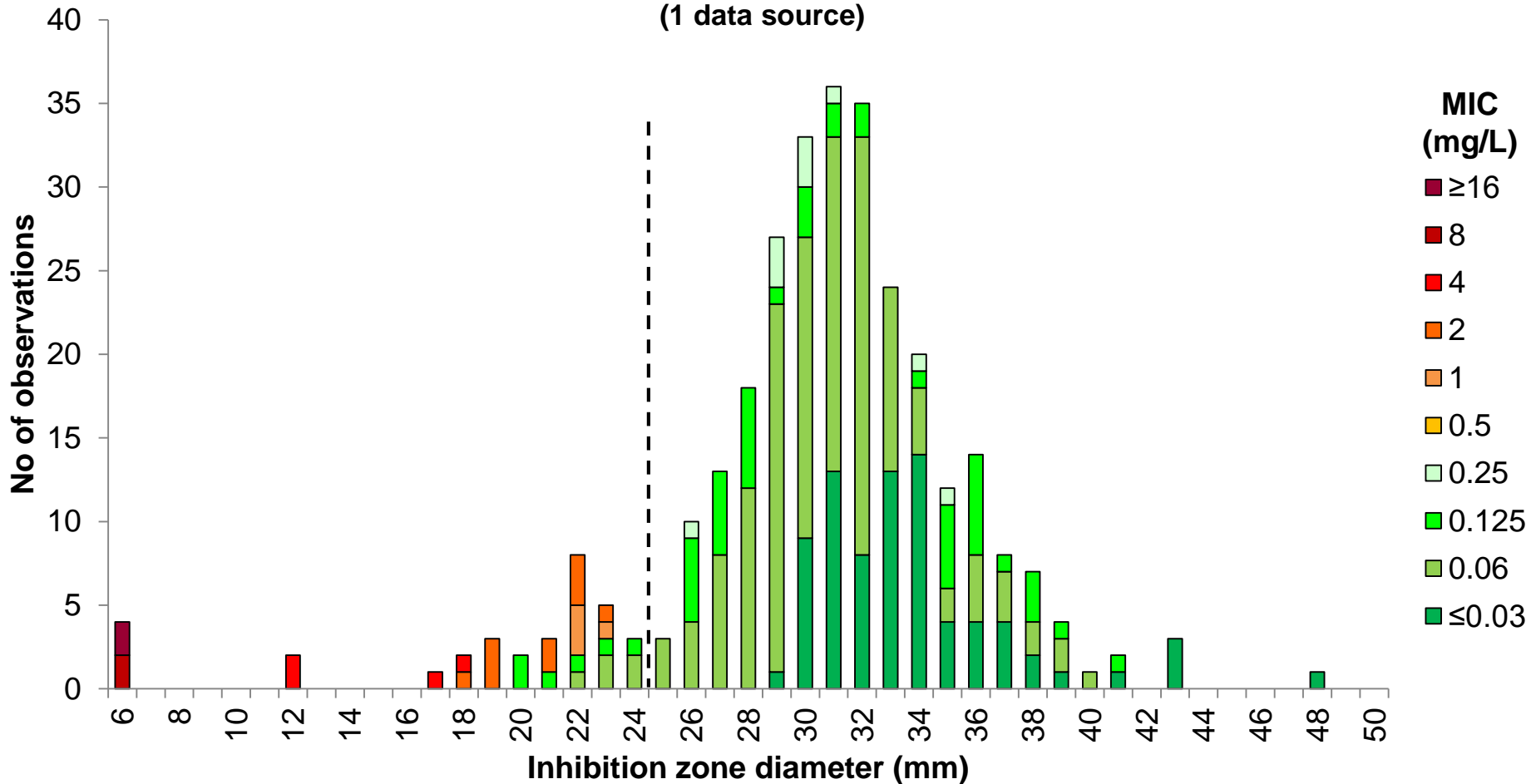
MIC $S \leq 0.5$, $R > 0.5$ mg/L

Zone diameter $S \geq 30$, $R < 30$ mm

Meropenem 10 µg vs. MIC

Bacillus spp., 152 isolates (304 correlates)

(1 data source)



Breakpoints

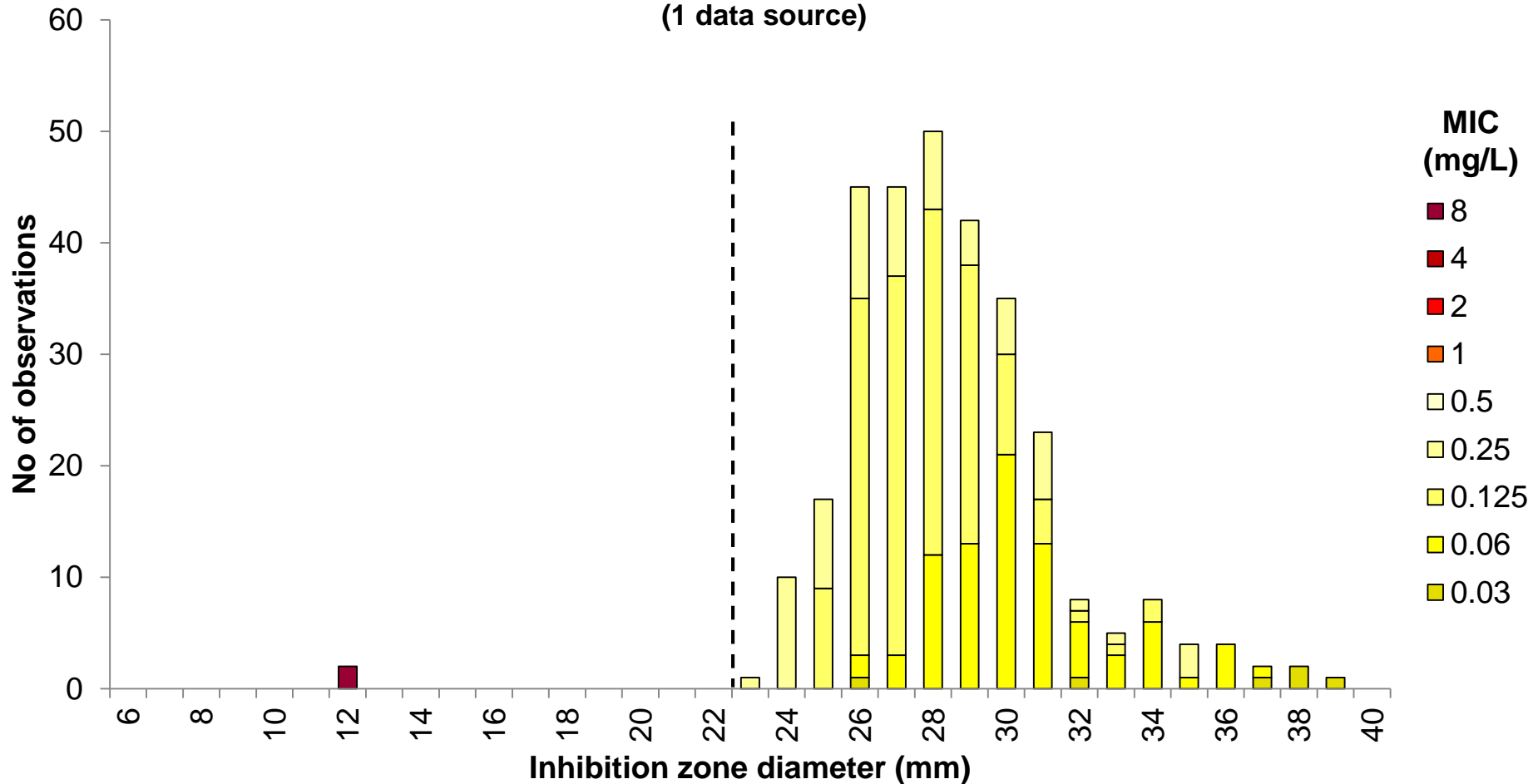
MIC S ≤ 0.25, R > 0.25 mg/L

Zone diameter S ≥ 25, R < 25 mm

Ciprofloxacin 5 μ g vs. MIC

Bacillus spp., 152 isolates (304 correlates)

(1 data source)



Breakpoints

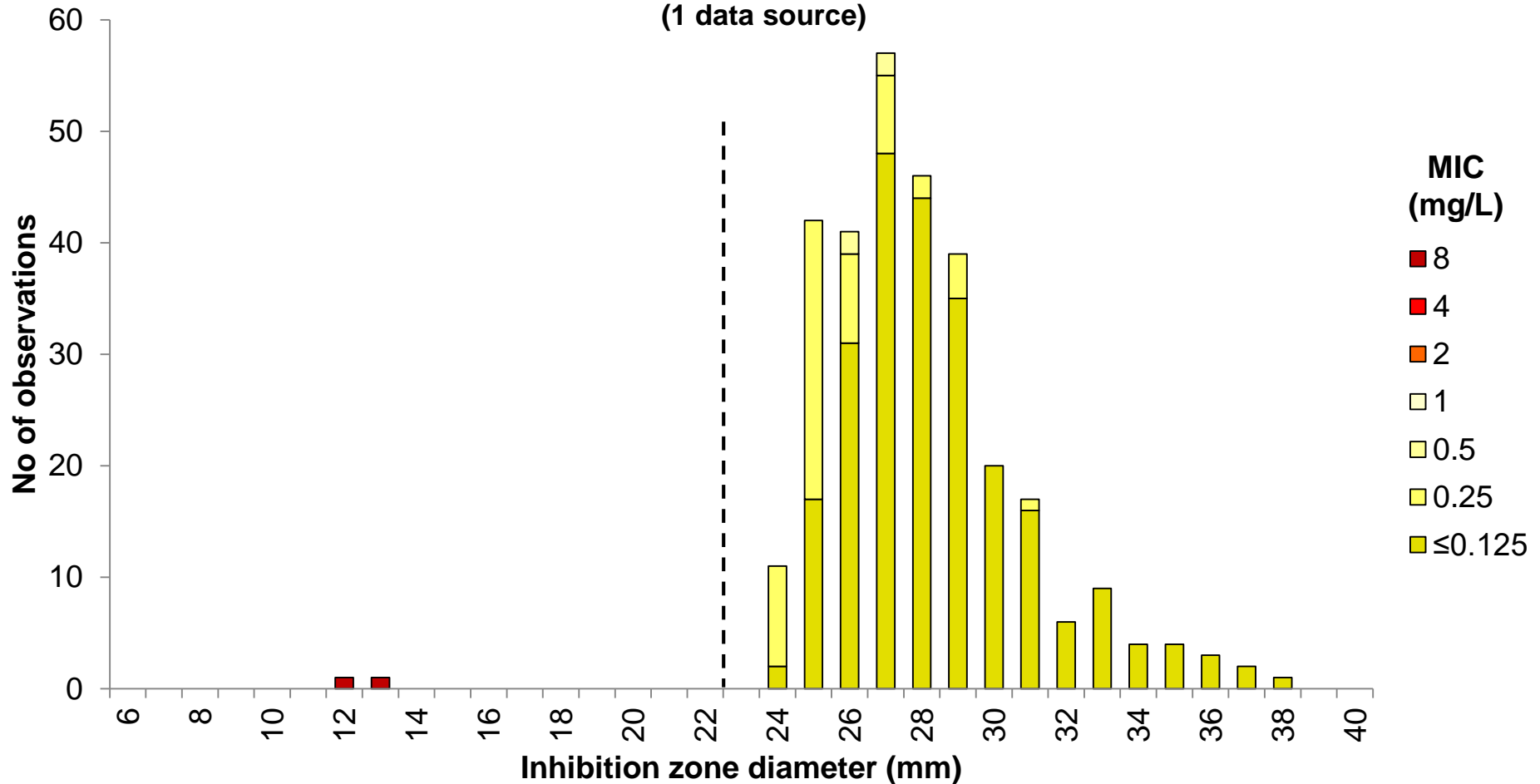
MIC $S \leq 0.001$, $R > 0.5$ mg/L

Zone diameter $S \geq 50$, $R < 23$ mm

Levofloxacin 5 μ g vs. MIC

Bacillus spp., 152 isolates (304 correlates)

(1 data source)



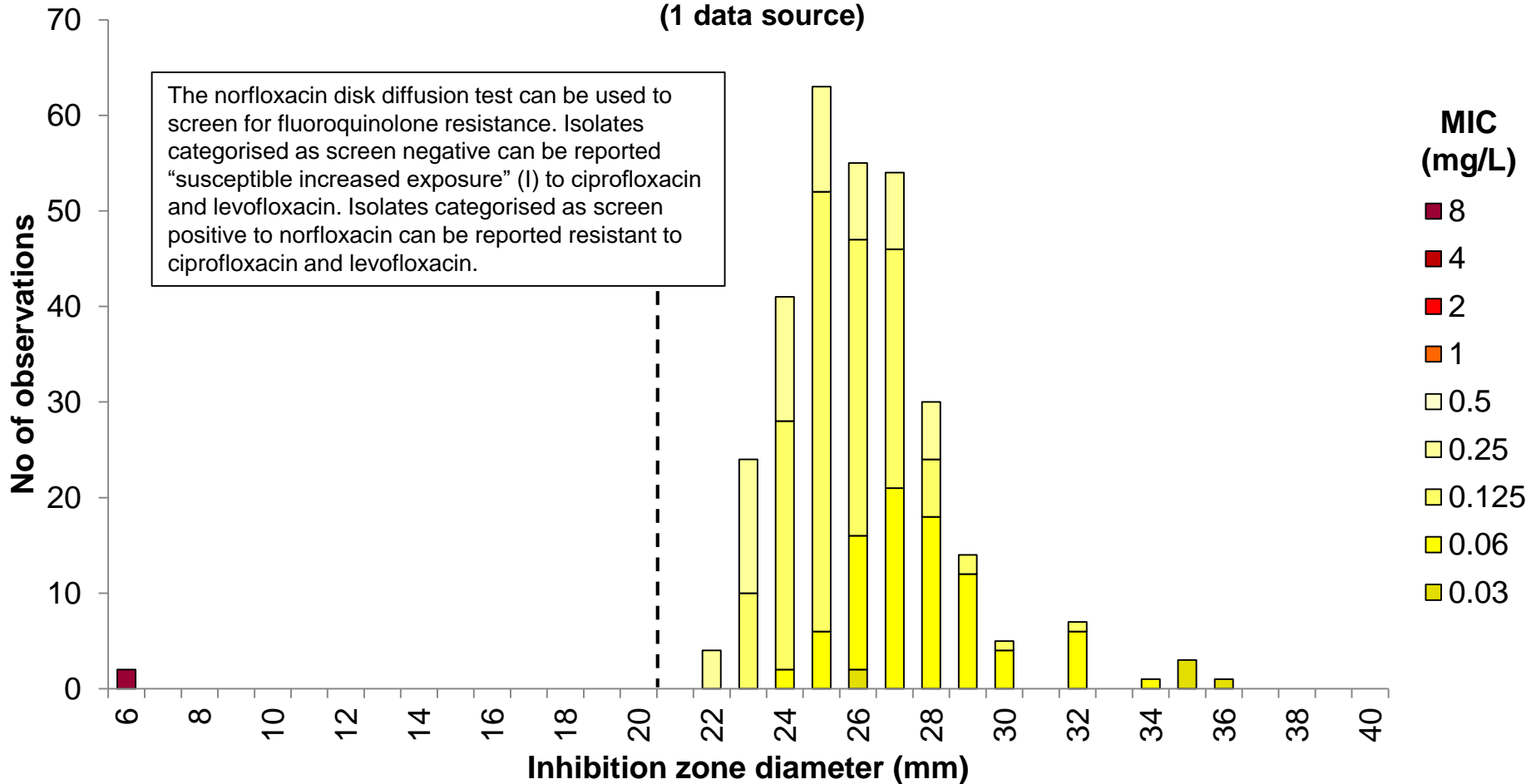
Breakpoints

MIC $S \leq 0.001$, $R > 1$ mg/L

Zone diameter $S \geq 50$, $R < 23$ mm

Norfloxacin 10 µg vs. Ciprofloxacin MIC *Bacillus* spp., 152 isolates (304 correlates)

(1 data source)



Breakpoints

Ciprofloxacin MIC

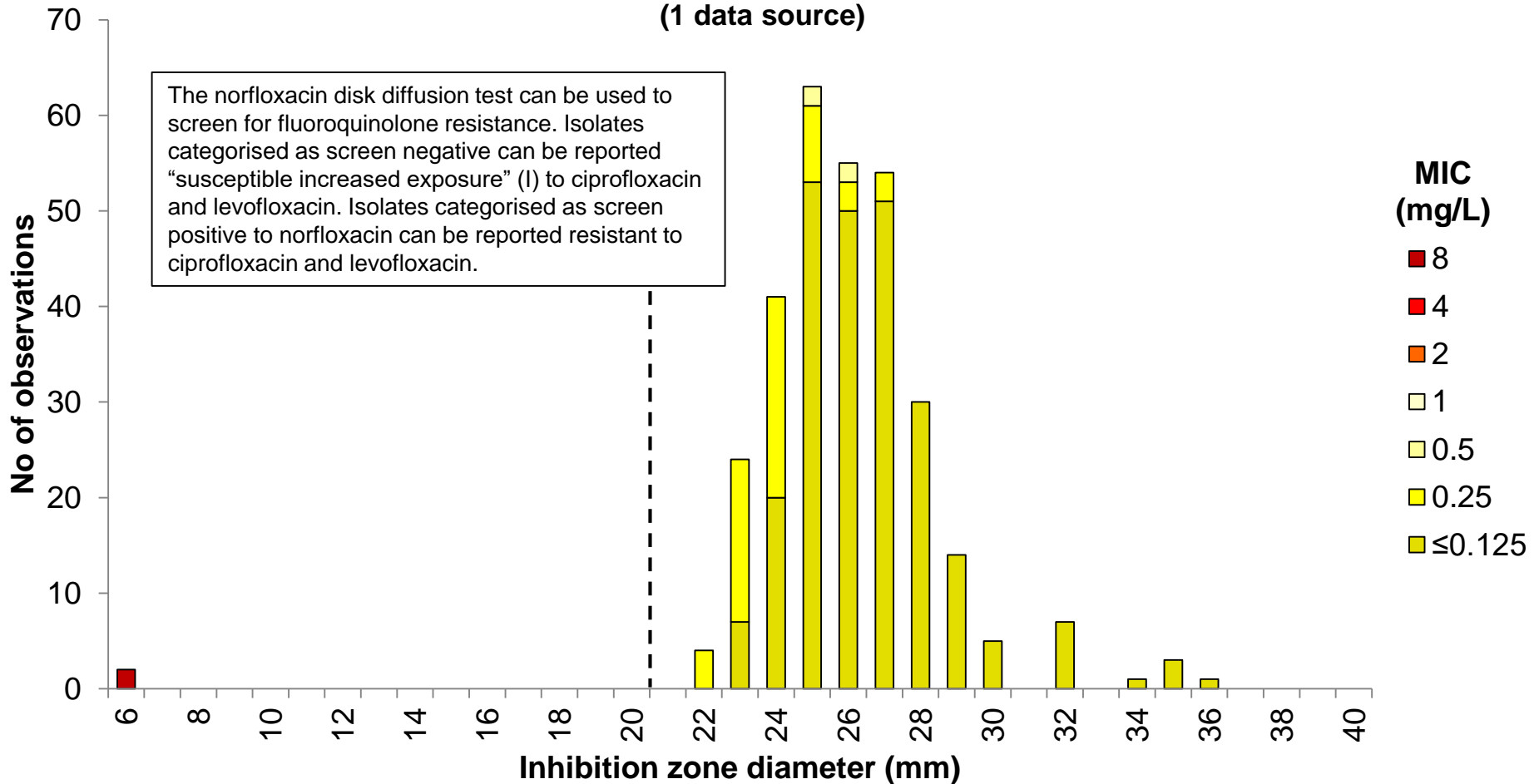
$S \leq 0.001$, $R > 0.5$ mg/L

Norfloxacin zone diameter (screen)

$S \geq 21$, $R < 21$ mm

Norfloxacin 10 µg vs. Levofloxacin MIC *Bacillus* spp., 152 isolates (304 correlates)

(1 data source)



Breakpoints

Levofloxacin MIC

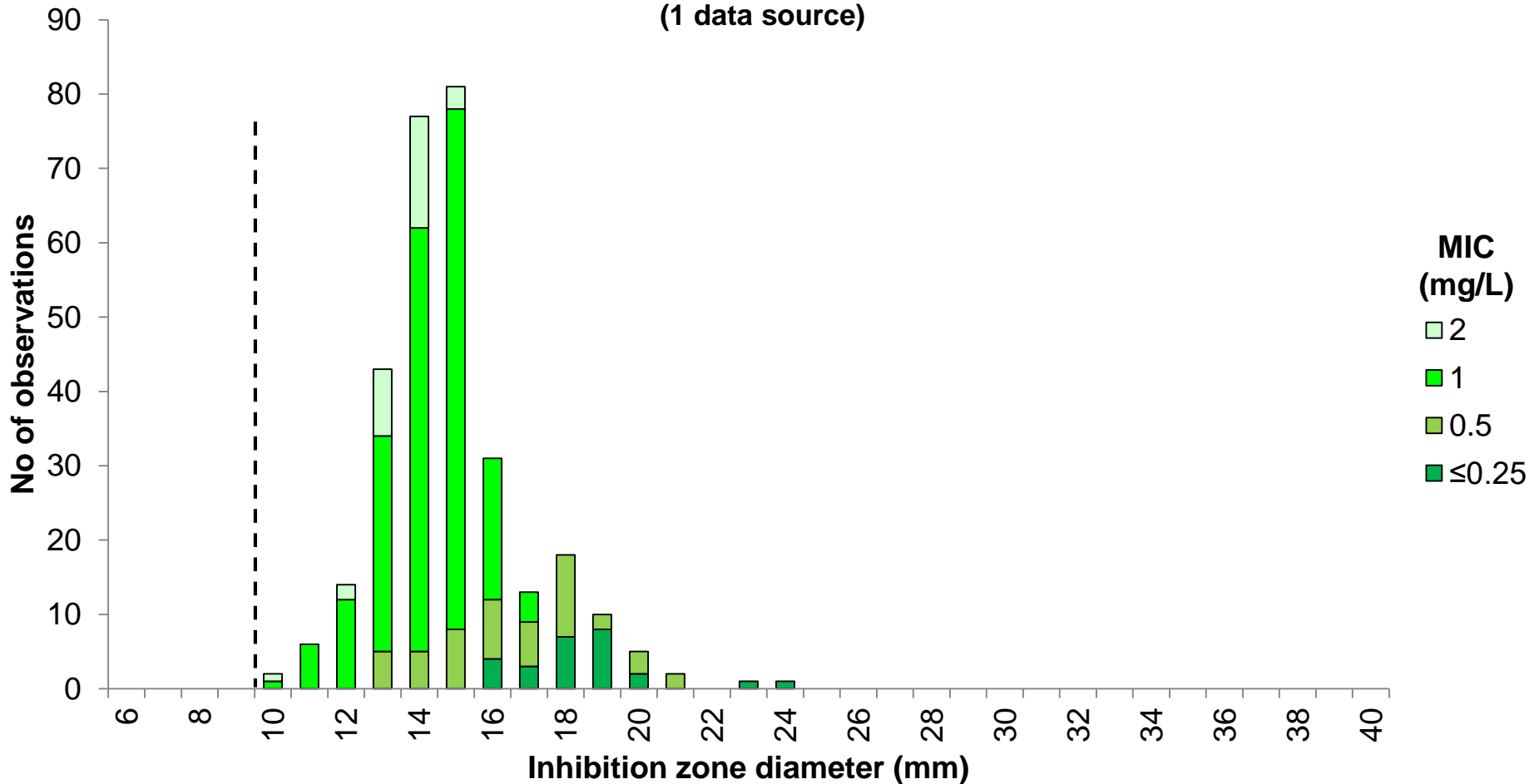
S≤0.001, R>1 mg/L

Norfloxacin zone diameter (screen) S≥21, R<21 mm

Vancomycin 5 µg vs. MIC

Bacillus spp., 152 isolates (304 correlates)

(1 data source)



Breakpoints

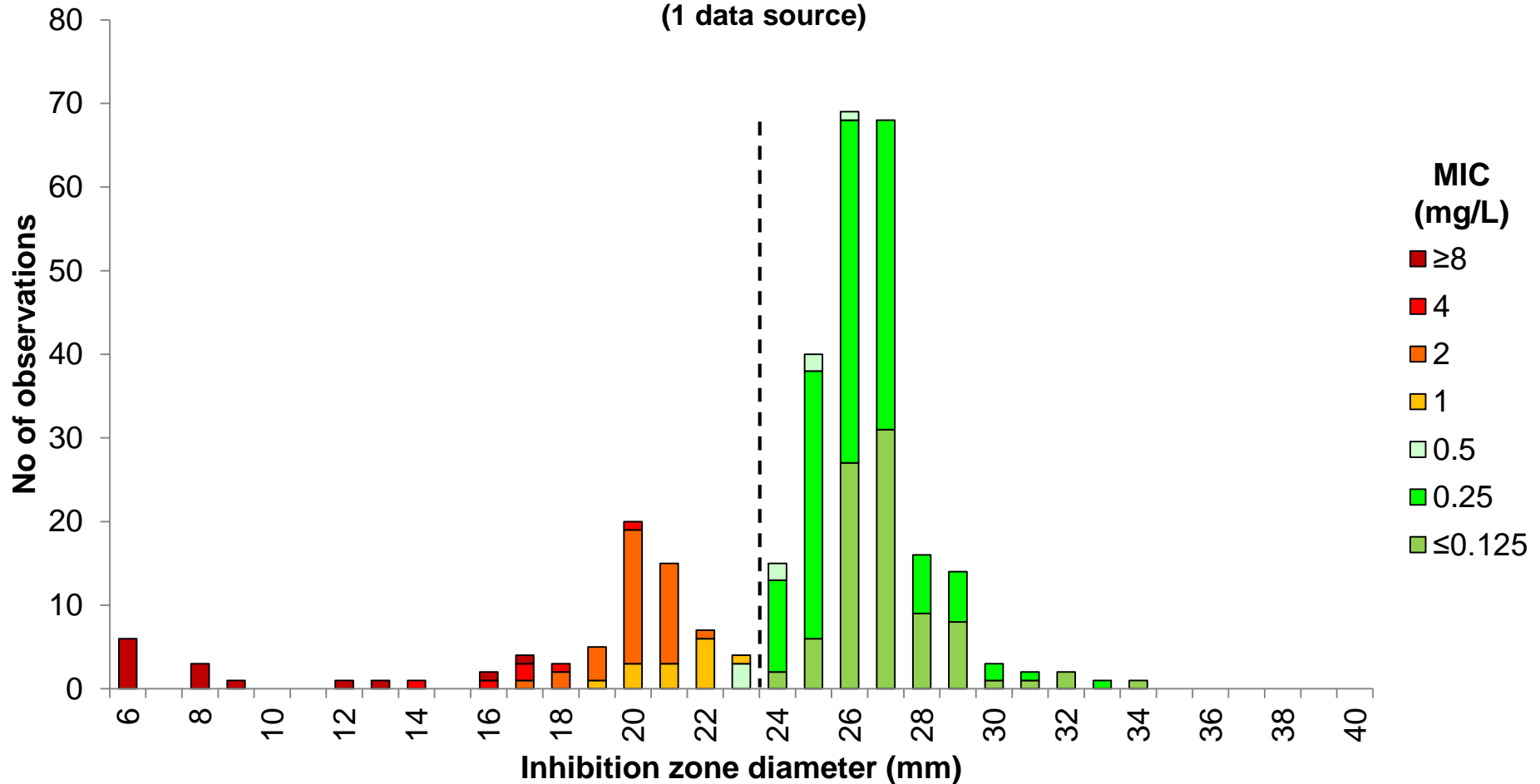
MIC S ≤ 2, R > 2 mg/L

Zone diameter S ≥ 10, R < 10 mm

Erythromycin 15 µg vs. MIC

Bacillus spp., 152 isolates (304 correlates)

(1 data source)



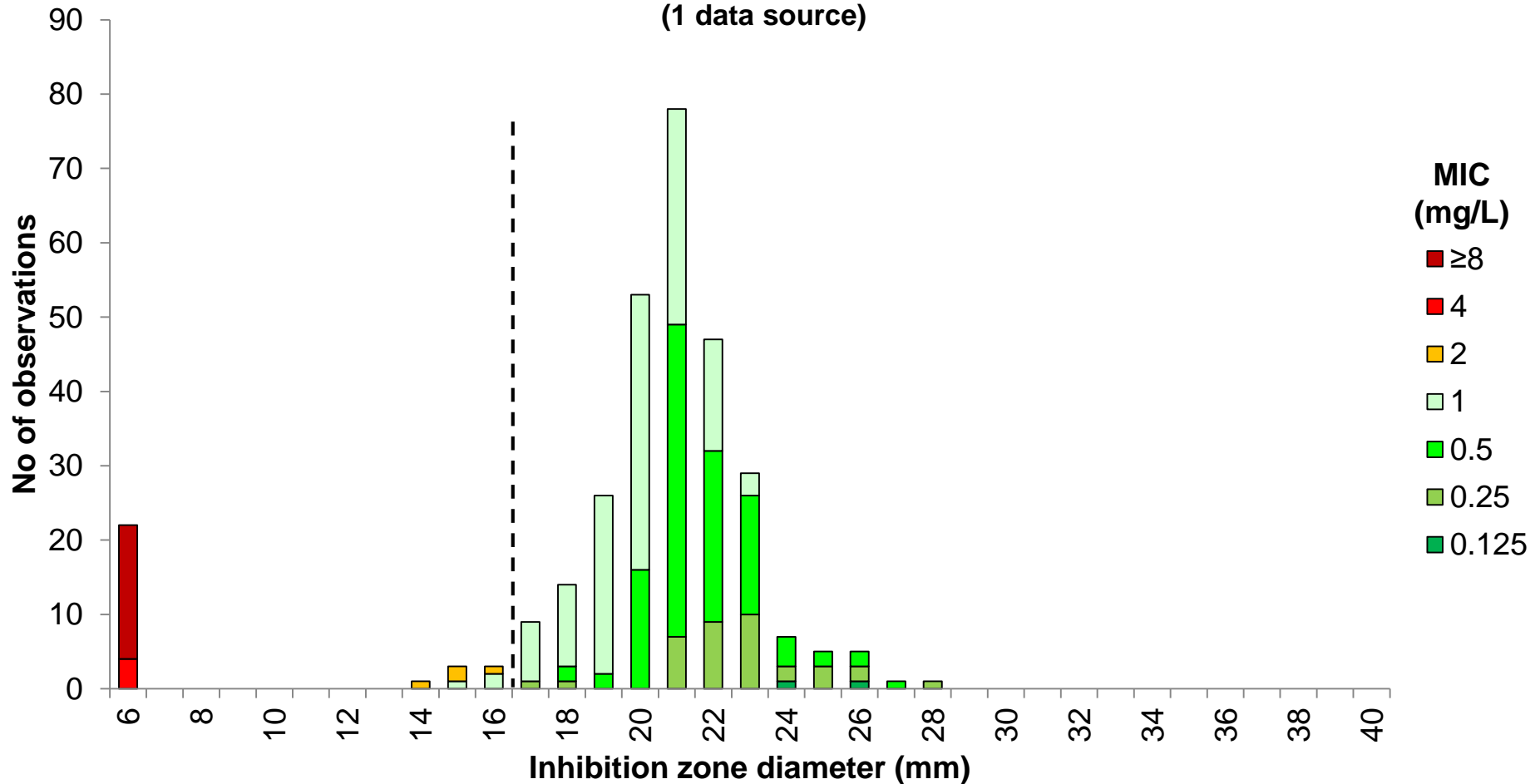
Breakpoints

MIC S \leq 0.5, R $>$ 0.5 mg/L

Zone diameter S \geq 24, R $<$ 24 mm

Clindamycin 2 µg vs. MIC *Bacillus* spp., 152 isolates (304 correlates)

(1 data source)



Breakpoints

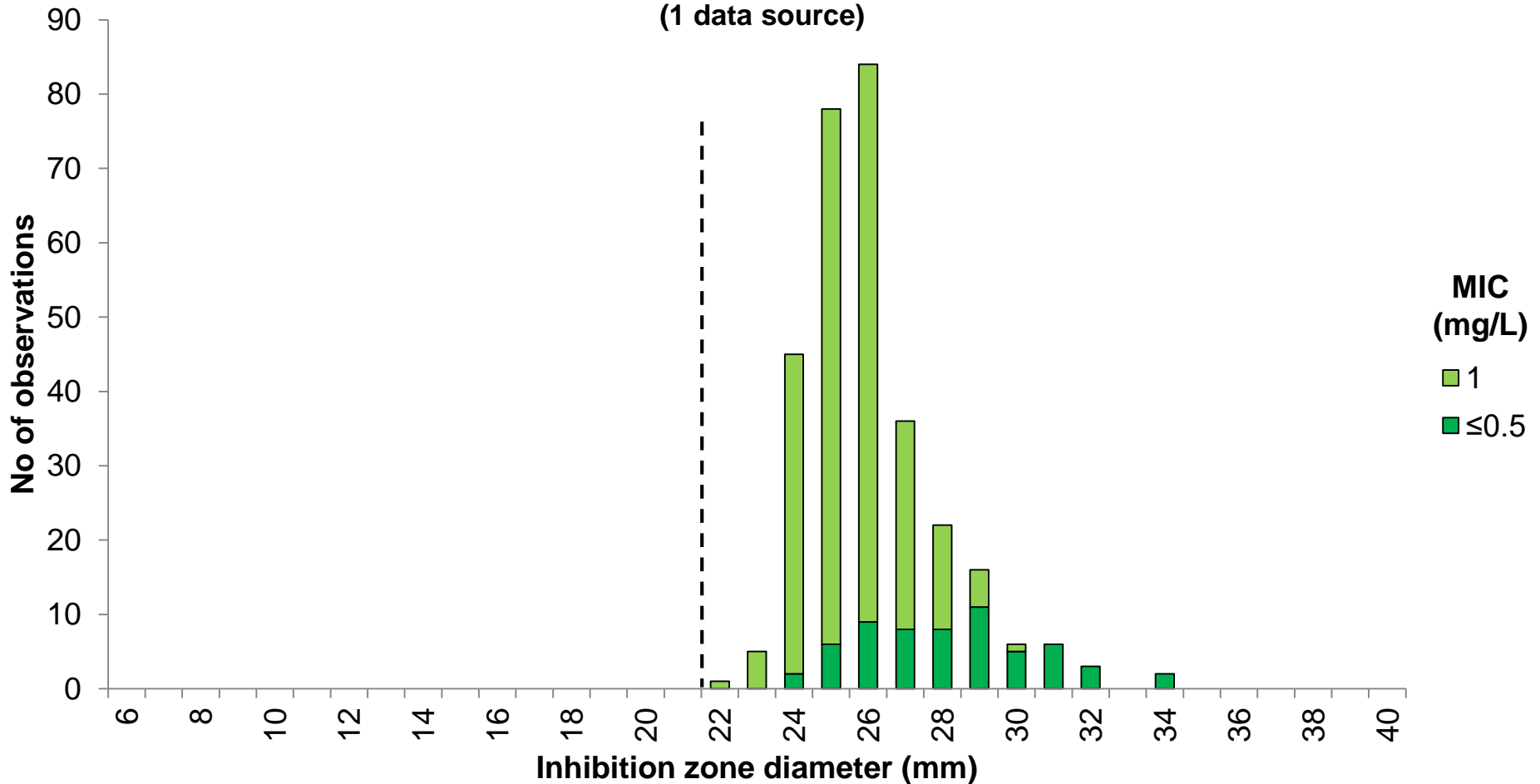
MIC $S \leq 1$, $R > 1$ mg/L

Zone diameter $S \geq 17$, $R < 17$ mm

Linezolid 10 µg vs. MIC

Bacillus spp., 152 isolates (304 correlates)

(1 data source)



Breakpoints

MIC S ≤ 2, R > 2 mg/L

Zone diameter S ≥ 22, R < 22 mm



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