

METHANE YIELD DATABASE: ONLINE INFRASTRUCTURE AND BIORESOURCE FOR METHANE YIELD DATA AND RELATED METADATA



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Abstract

The aim of this study was to develop and validate a community supported online infrastructure and bioresource for methane yield data and accompanying metadata collected from published literature. In total, 1164 entries described by 15,749 data points were assembled. Methane yield database is accessible online on the web site <http://methane.fe.uni-lj.si/>

1. Results and discussion

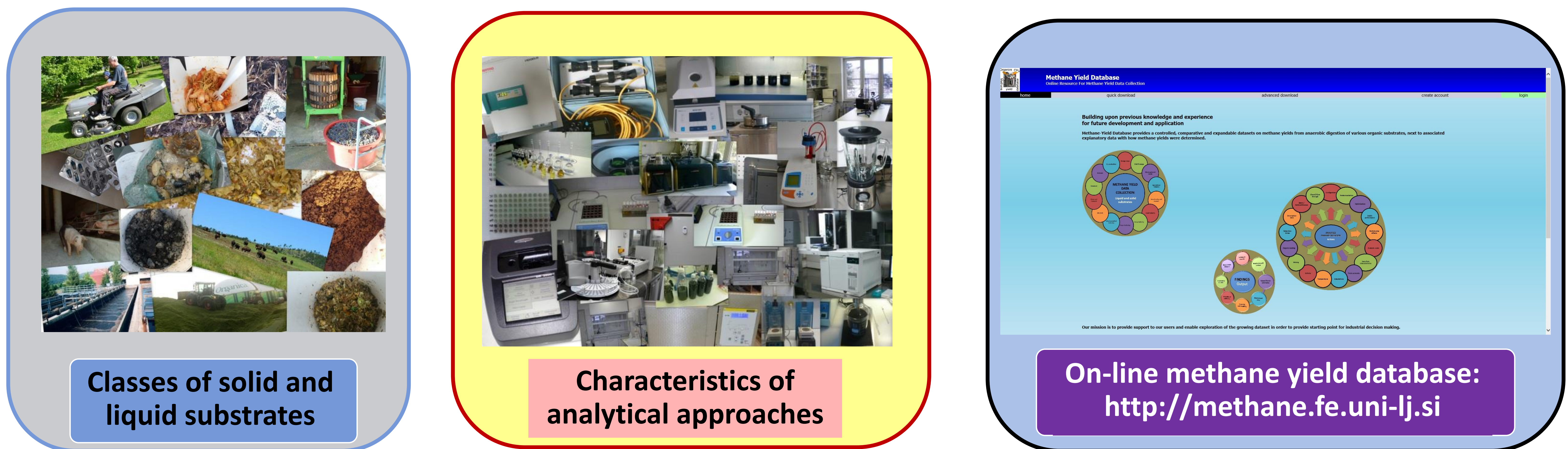


Figure 1: A schematic view of data assembling, and collection of analytical procedures to develop and build free on-line methane yield database.

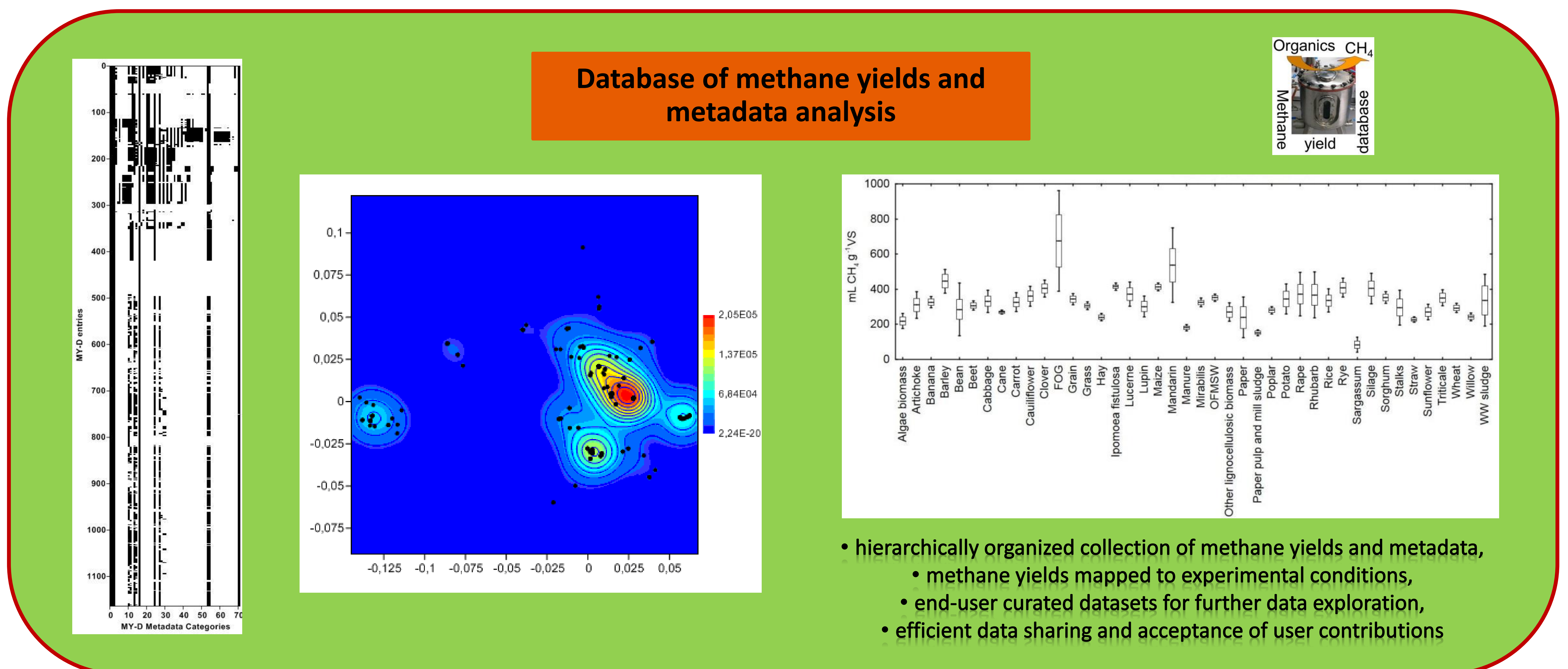


Figure 2: A schematic view of the assembled data in MY-D showing the extent of overlap in the reported metadata categories as observed from published literature (left). (middle) The Kernell density of data distribution presented in (left) shows the existence of six major classes of reporting strategies (contours with higher density of datapoints with similar reporting strategies).

2. Conclusions

Analysis of data collection showed little congruence in reporting of methodological approaches. The largest identifiable source of variation in reported methane yields was represented by authorship (i.e. substrate batches within particular substrate class) within which experimental scales (volumes (0.02 l to 5 l), incubation temperature (34°C to 40°C) and %VS of substrate played an important role ($p < 0.05$, npermutations=999) as well. The largest fraction of variability, however, remained unaccounted for and thus unexplained (>63%). This calls for reconsideration of accepted approaches to reporting data in currently published literature to increase capacity to service industrial decision making to a greater extent.