

# Global commercialization trends of microbial products and processes

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A fundamental premise in industrial microbiology and biotechnology is that microorganisms are a source of commercially useful products and processes. While there is always an element of serendipity involved, success is more often defined by access to appropriate resources, including collections of well-documented strains and historical knowledge about their metabolic and genetic potential. While some organizations still maintain private strain collections many have abandoned this strategy due to cost. There are, however, public resources that can serve as a substitute, chief of which are the international patent repositories. These collections hold the strains that are key to many patented microbiological inventions. Once a patent expires, these strains can be released without restriction. These strains are distinct from non-patent strains because of the amount of information that is publically available, although that information is difficult to obtain or use. Our objective is to make the connections between strains and the patent literature easy to navigate and to make the information about patented microbial products and processes more readily discoverable. We recently completed a first pass through the USDA ARS Patent Collection (NRRL Collection, Peoria, IL). Using proprietary text mining methods, we were able to identify global commercialization trends in 162 technology classes over a 70 year time span by following more than 4,000 distinct NRRL strains referenced by over 16,000 US and foreign patents drawn from a corpus of >80 M patent documents. This presentation will focus on prospective use of these data in commercial environments.