# Article information:

Utilization of Soybeans as Bio-Catalyst in Calcite Precipitation Method for Repairing Cracks in Concrete | Rahmawan | Jurnal Teknik Sipil dan Perencanaan
<https://journal.unnes.ac.id/nju/index.php/jtsp/article/view/31834>

# Article summary:

1. Soybeans can be used as a bio-catalyst in the calcite precipitation method for repairing cracks in concrete.

2. Enzyme-mediated calcite precipitation (EMCP) using soybean powder as a urease enzyme replacement can improve the self-healing ability of concrete.

3. The permeability and compressive strength of concrete can be influenced by the addition of bacteria or bio-catalysts such as soybeans.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article titled "Utilization of Soybeans as Bio-Catalyst in Calcite Precipitation Method for Repairing Cracks in Concrete" by Zulfikar et al. presents a study on the use of soybean powder as a catalyst material in enzyme-mediated calcite precipitation (EMCP) for crack healing in concrete. The authors aim to investigate the effect of soybean powder on the compressive strength, water absorption, and permeability of concrete.

Overall, the article provides a detailed account of the research methodology and results. However, there are some potential biases and limitations that need to be considered. Firstly, the study only focuses on one type of catalyst material (soybean powder) and does not compare its effectiveness with other materials or methods. This limits the generalizability of the findings.

Secondly, while the authors claim that soybean powder is an effective catalyst material for EMCP, they do not provide sufficient evidence to support this claim. The study only includes one set of experimental data, which may not be enough to draw definitive conclusions about the effectiveness of soybean powder.

Thirdly, there is no discussion or consideration given to any potential risks associated with using soybean powder as a catalyst material. For example, it is unclear whether soybean powder could have any negative effects on human health or the environment.

Finally, there is some promotional content in the article that suggests that EMCP using soybean powder could be a viable solution for repairing cracks in concrete structures. While this may be true, it is important to note that further research and testing would be needed before this method can be widely adopted.

In conclusion, while the article provides valuable insights into the use of soybean powder as a catalyst material for EMCP in concrete repair, there are some limitations and potential biases that need to be considered. Further research and testing would be needed before this method can be recommended as a viable solution for repairing cracks in concrete structures.

# Topics for further research:

* Comparison of different catalyst materials for enzyme-mediated calcite precipitation
* Risks associated with using soybean powder as a catalyst material in concrete repair
* Long-term durability of concrete repaired using EMCP with soybean powder
* Environmental impact of using soybean powder in concrete repair
* Effectiveness of EMCP in repairing different types of concrete cracks
* Cost-effectiveness of using soybean powder as a catalyst material in concrete repair.

# Report location:

<https://www.fullpicture.app/item/f5e77c32481b5f17abfad914c8ee1da2>