



**Global Research &  
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Conference Venue

Asian Institute of Technology (AIT), Conference Center, Bangkok, Thailand

Email: [info@grdsweb.org](mailto:info@grdsweb.org)

<http://www.icserthailand.com>



**Department of Civil Engineering, Buein Zahra Technical  
University, Buein Zahra, Qazvin  
[hamed.a.keykha@gmail.com](mailto:hamed.a.keykha@gmail.com)**

**ABSTRACT**

This paper describes a new method, called electro-biogrouting, for the improvement of soft soil with low hydraulic conductivity. This method has two mechanisms for soil improvement, injection of live bacteria and products of bacteria. Initially, the calcium ions are moved across the specimen by electromigration from the anode to the cathode. In first method, the urea, which is non-ionic and solvable, is transported by the electro-osmotic flow from the anode to the cathode. Then, the live bacteria with negative surface charge are transported by electromigration from the cathode to the anode. In second method, a blend of urea and bacteria, which allowed to release the urease enzyme and made carbonate ( $\text{CO}_3^{2-}$ ), is transported by electromigration from the cathode to the anode. During this process  $\text{CaCO}_3$  precipitate in the porous and increases the shear strength of the soil.

Nik Ruzni Nik Idris  
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**Combining Aggregate Data and Individual Patient Data in Meta-  
Analysis : An Alternative Method**

**1N.R.N. Idris\***

**Computational and Theoretical Sciences Department  
Kulliyah of Science  
International Islamic University Malaysia  
Kuantan 25200, Pahang, Malaysia.  
[ruzni@iium.edu.my](mailto:ruzni@iium.edu.my)**

**N.A. Misran**

**Department of Computational and Theoretical Sciences  
Kulliyah of Science  
International Islamic University Malaysia  
Kuantan 25200, Pahang, Malaysia.  
[ruzni@iium.edu.my](mailto:ruzni@iium.edu.my)**

**ABSTRACT**

It has been shown that, in cases where both the AD and IPD studies are available, combining these two levels of data could improve the overall meta-analysis estimates, compared to utilizing AD studies alone. However, the coverage probability of estimates based on combined studies are relatively low compared to the AD-only meta-analysis, when the existing standard method was used to combine these studies. The aim of this paper is to introduce some modifications to the existing two-stage method for combining the aggregate data (AD) and individual



patient data (IPD) studies in meta-analysis. We evaluated the effects of these modifications on the estimates of the overall treatment effect, and compared them with those from the standard method. The influence of the number of studies included in a meta-analysis,  $N$ , and the ratio of AD: IPD on these estimates were also examined. We used percentage relative bias (PRB), root mean-square-error (RMSE), and coverage probability to assess the overall efficiency of these estimates. The results revealed that the proposed method had been able to improve the coverage probability while maintaining the level of bias and RMSE at par to their existing counterpart. These findings demonstrated that the technique for combining different levels of studies influenced the efficacy of the overall estimates, which in turn is crucial for drawing reliable and valid conclusions .

Keywords : Meta-analysis; Combined-data; Aggregate data; Simulation; Bias; Coverage



Shahram Ashraf  
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**Study Effect Of Mycorrhiza Fungi And Drought On Plant Nutrient Uptake By Green Bean**

**Shahram. Ashraf**

**Department of Soil Science, Damghan Branch, , Islamic Azad University, Damghan, Iran**  
[shahramashraf35@gmail.com](mailto:shahramashraf35@gmail.com)

**Leila Jalali**

**Department of Plant Protection, Damghan Branch, Islamic Azad University, Damghan, Iran**  
[L.jalali79@yahoo.com](mailto:L.jalali79@yahoo.com)

**Mehdi Moniri**

**Department of Soil Science, Damghan Branch, Islamic Azad University, Damghan, Iran**  
[Moniri@yahoo.com](mailto:Moniri@yahoo.com)

**ABSTRACT**

Use of biological fertilizers in agricultural systems are important spatially in promoting sustainable production and maintain soil fertility .To investigate the effect of improving the nutritional status of green bean by mycorrhiza fungi in this study was done a randomized complete block design in a factorial experiment. Drought factor at 3 levels (T0,T1,T2) and Mycorrhiza fungi inoculated at three levels (no inoculation=F0, F1 and F2) in 4 replicates . The medium of loamy sand were used. The results showed that effects of drought stress , mycorrhiza fungi and their interaction on N,P and K was significant. Drought stress had significant effect on phosphorus, potassium and nitrogen concentration. By increasing drought stress from FC (control) to 0.25FC percent field capacity, the content of these elements in leaves