

Effect of Highly Active EcoSil, ComCat, and AnnGro on Soil Improvement in Protected Land

SG Crop Solutions

Overview



In 2018, we test a nutrition package including ComCat, EcoSil, and AnnGro to see its whether it could improve soil properties and the microbial activities within the soil. With positive results in both physical and chemical properties of the soil, we have some further clarity on the role of EcoSil in improving soil fertility.

The trial is conducted in 3 different locations with 3 different soil types: clay, sandy, and loam. The blocks are arranged in groups, with a plot area of 33 m². Trial selection is carried out at the seedling stage of the crop: sowing, fertilizing, irrigation, chemical adjustment, pest control, and field management.

The 3 treatments in the study:

1. EcoSil: 3 000 mL/hm²
2. ComCat + EcoSil + AnnGro: 150 g/hm² + 3 000 mL/hm² + 150 ml/hm², respectively
3. Control: conventional farming method



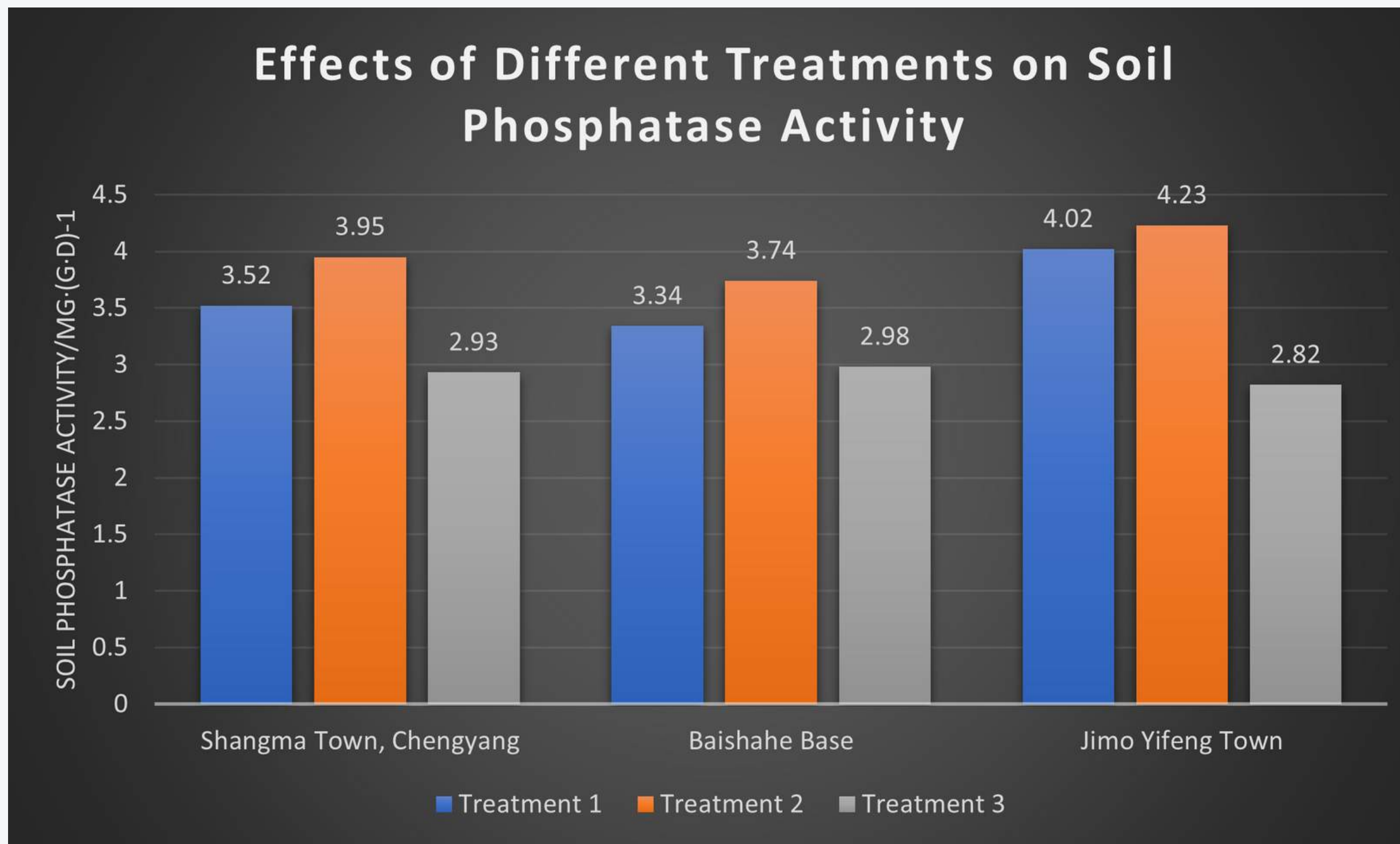
Abstract

In order to clarify the effect of EcoSil on soil improvement, taking the protected soil in Qingdao City as the research object, the treatment of silicon fertilizer EcoSil, ComCat, and AnnGro nutrition package was designed for experimental demonstration. The results showed that compared with the control treatment, using the nutrition package could:

- Increase the amount of soil aggregates by 10.61%-34.49%
- Increase cation exchange capacity increased by 8.56%-19.69%
- Increase soil pH value increased by 0.03-0.44 and soil available silicon content by 68.31%
- Increase soil exchangeable calcium content increased by 25.90%
- Increase the number of bacteria, fungi and actinomycetes by 45.45% , 101.36% and 247.06% , respectively
- Increase soil urease and phosphatase activities increased by 24.66% and 42.55%, respectively

The study is conducted with the help of National Agricultural Technology Extension Service Center in Beijing in 2018. The study concluded that application of silicon fertilizer EcoSil, ComCat, and AnnGro could significantly improve soil physical and chemical properties, increase microbial number and soil enzyme activity, improve soil fertility.

Applications and Results

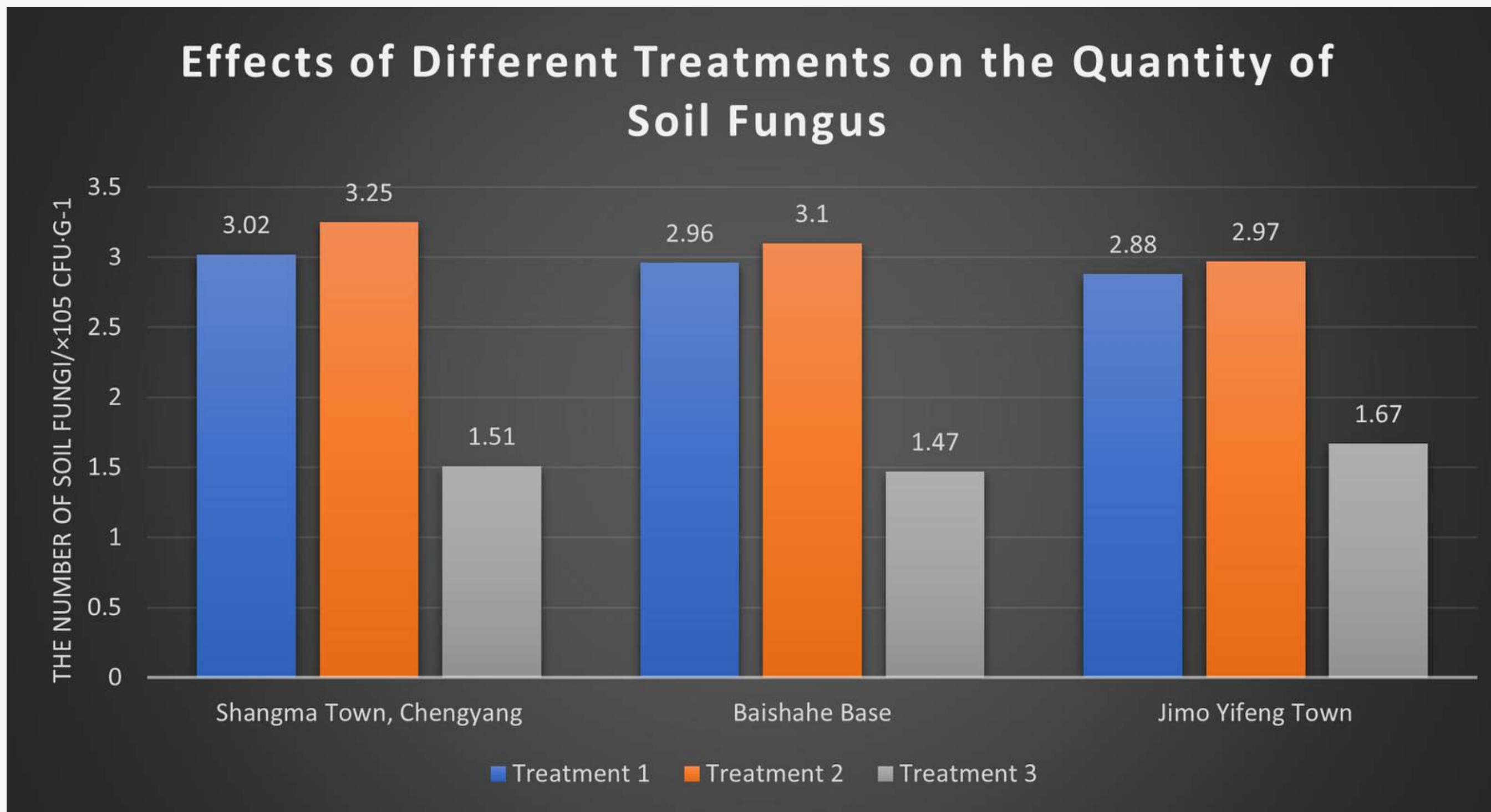


1. EcoSil: 3 000 mL/hm²

2. ComCat + EcoSil + AnnGro: 150 g/hm² + 3 000 mL/hm² + 150 ml/hm², respectively

3. Control: conventional method

Applications and Results

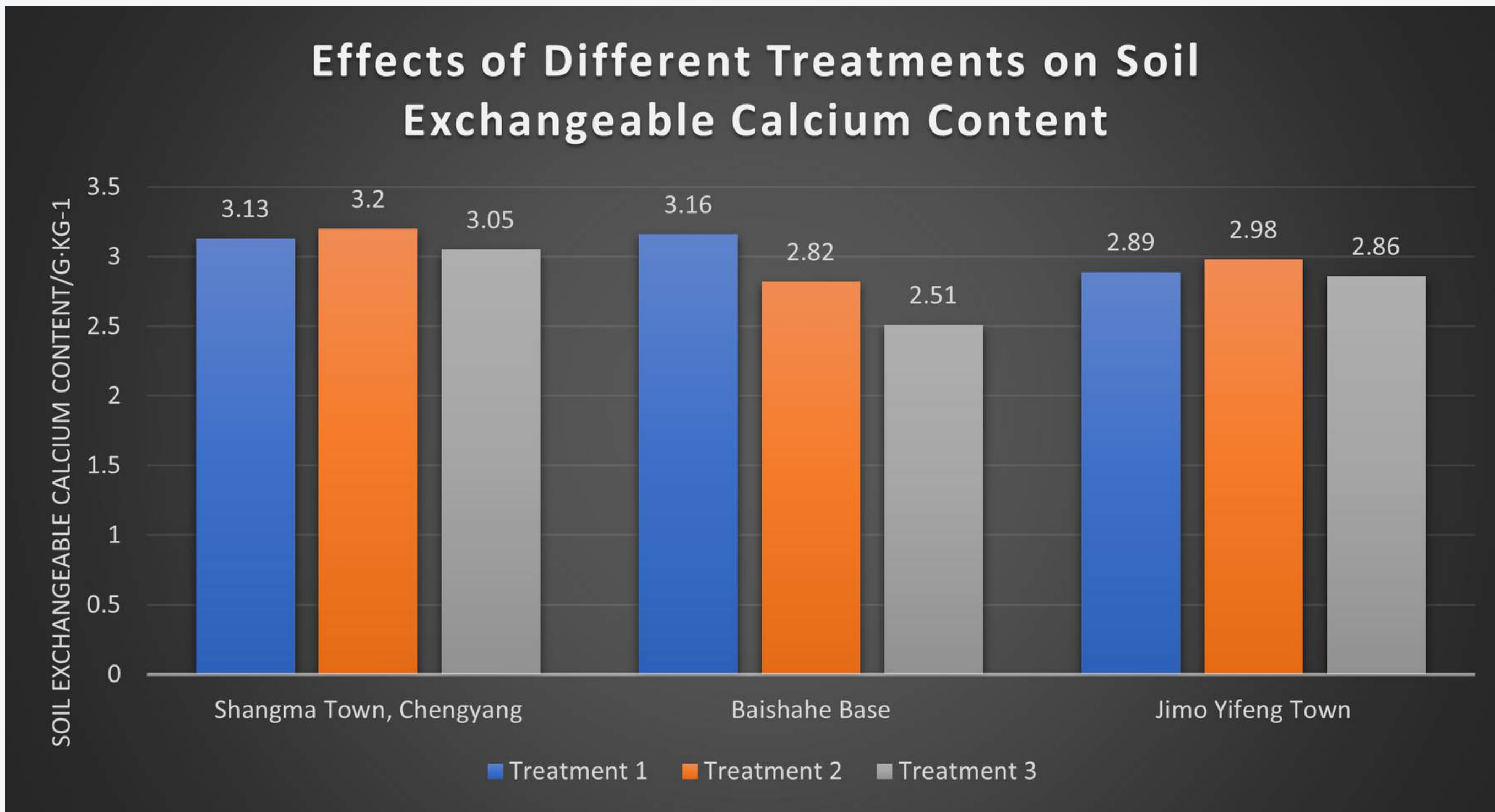


1. EcoSil: 3 000 mL/hm²

2. ComCat + EcoSil + AnnGro: 150 g/hm² + 3 000 mL/hm² + 150 ml/hm², respectively

3. Control: conventional method

Applications and Results

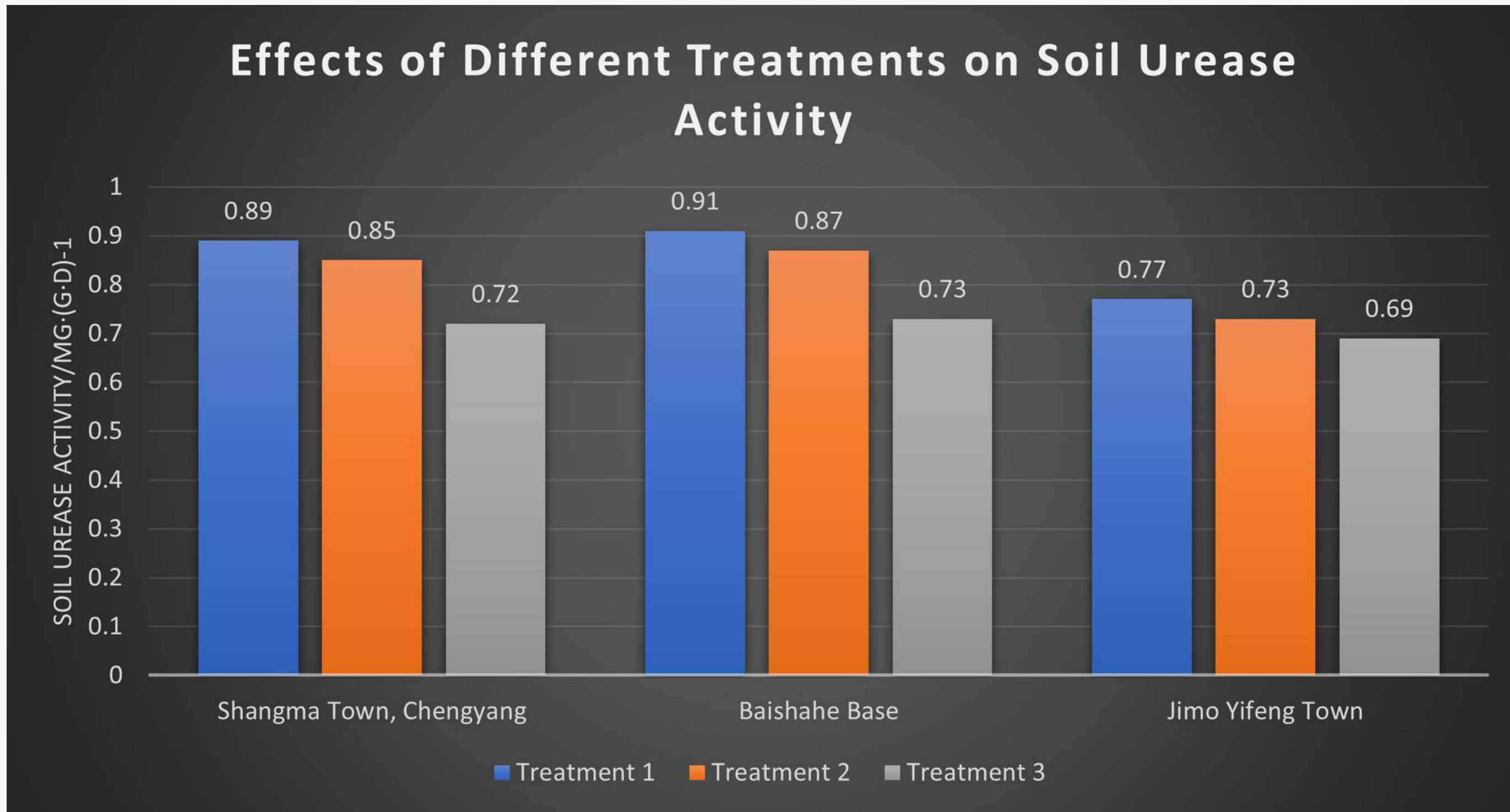


1. EcoSil: 3 000 mL/hm²

2. ComCat + EcoSil + AnnGro: 150 g/hm² + 3 000 mL/hm² + 150 ml/hm², respectively

3. Control: conventional method

Applications and Results

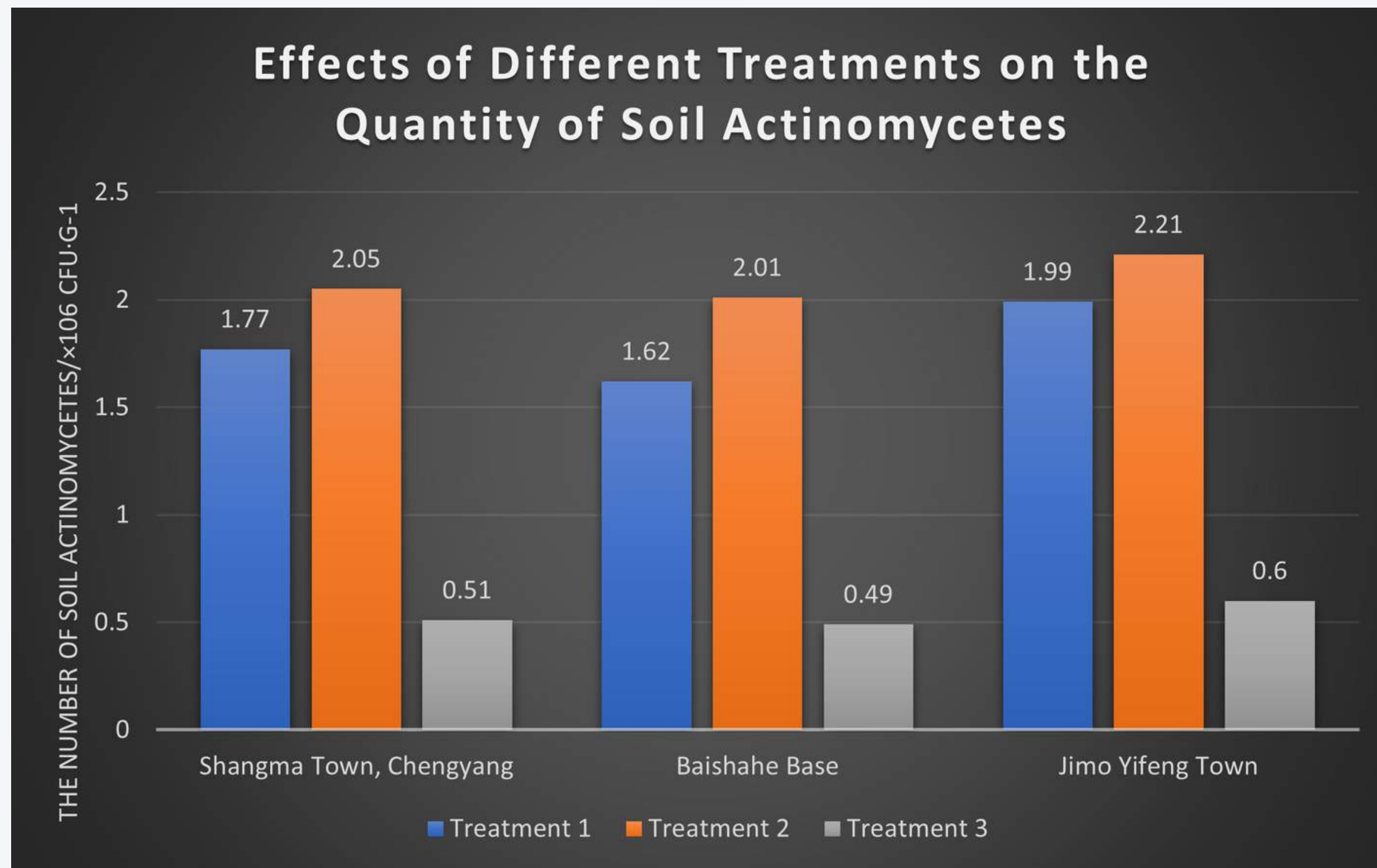


1. EcoSil: 3 000 mL/hm²

2. ComCat + EcoSil + AnnGro: 150 g/hm² + 3 000 mL/hm² + 150 ml/hm², respectively

3. Control: conventional method

Applications and Results

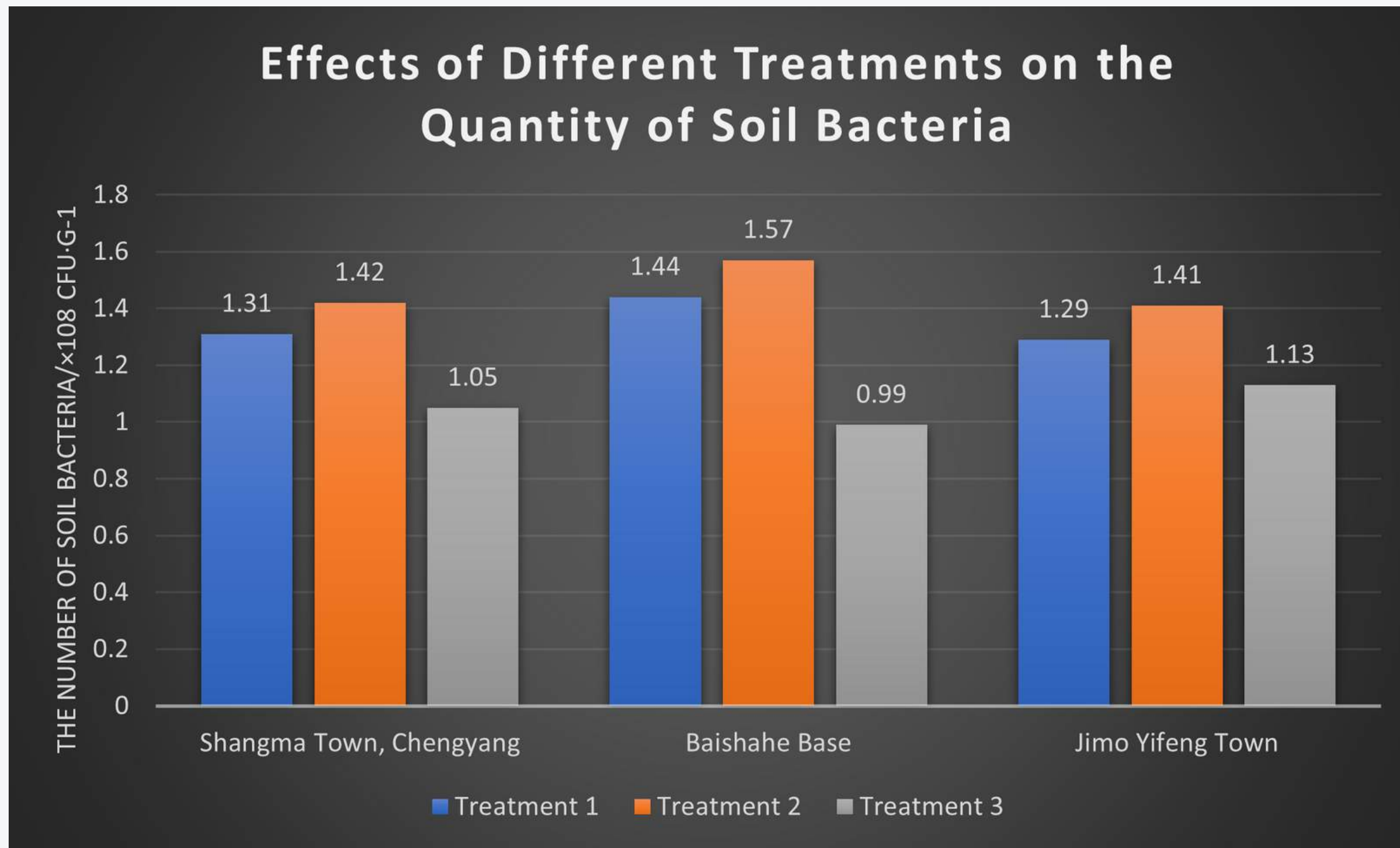


1. EcoSil: 3 000 mL/hm²

2. ComCat + EcoSil + AnnGro: 150 g/hm² + 3 000 mL/hm² + 150 ml/hm², respectively

3. Control: conventional method

Applications and Results

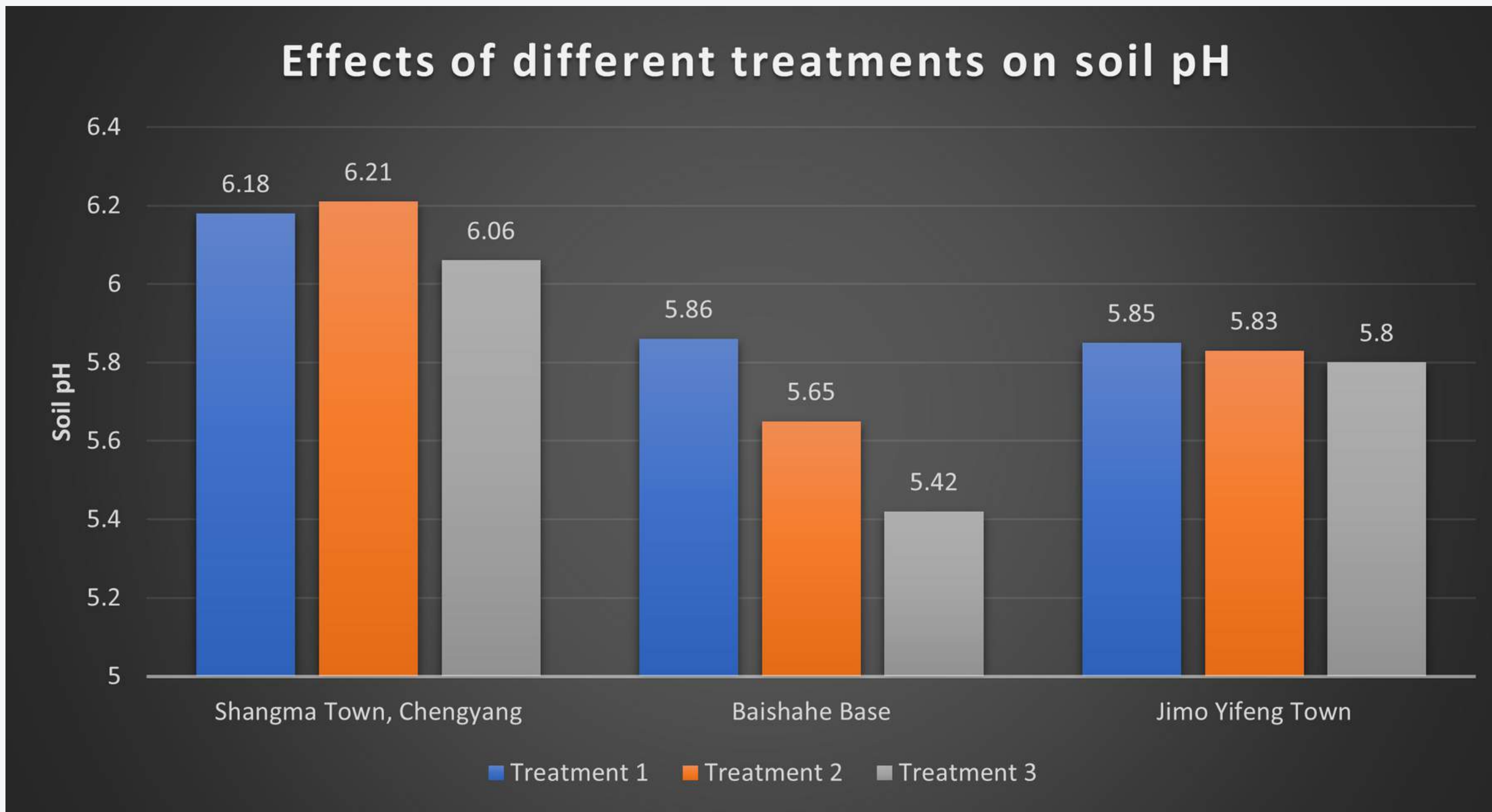


1. EcoSil: 3 000 mL/hm²

2. ComCat + EcoSil + AnnGro: 150 g/hm² + 3 000 mL/hm² + 150 ml/hm², respectively

3. Control: conventional method

Applications and Results

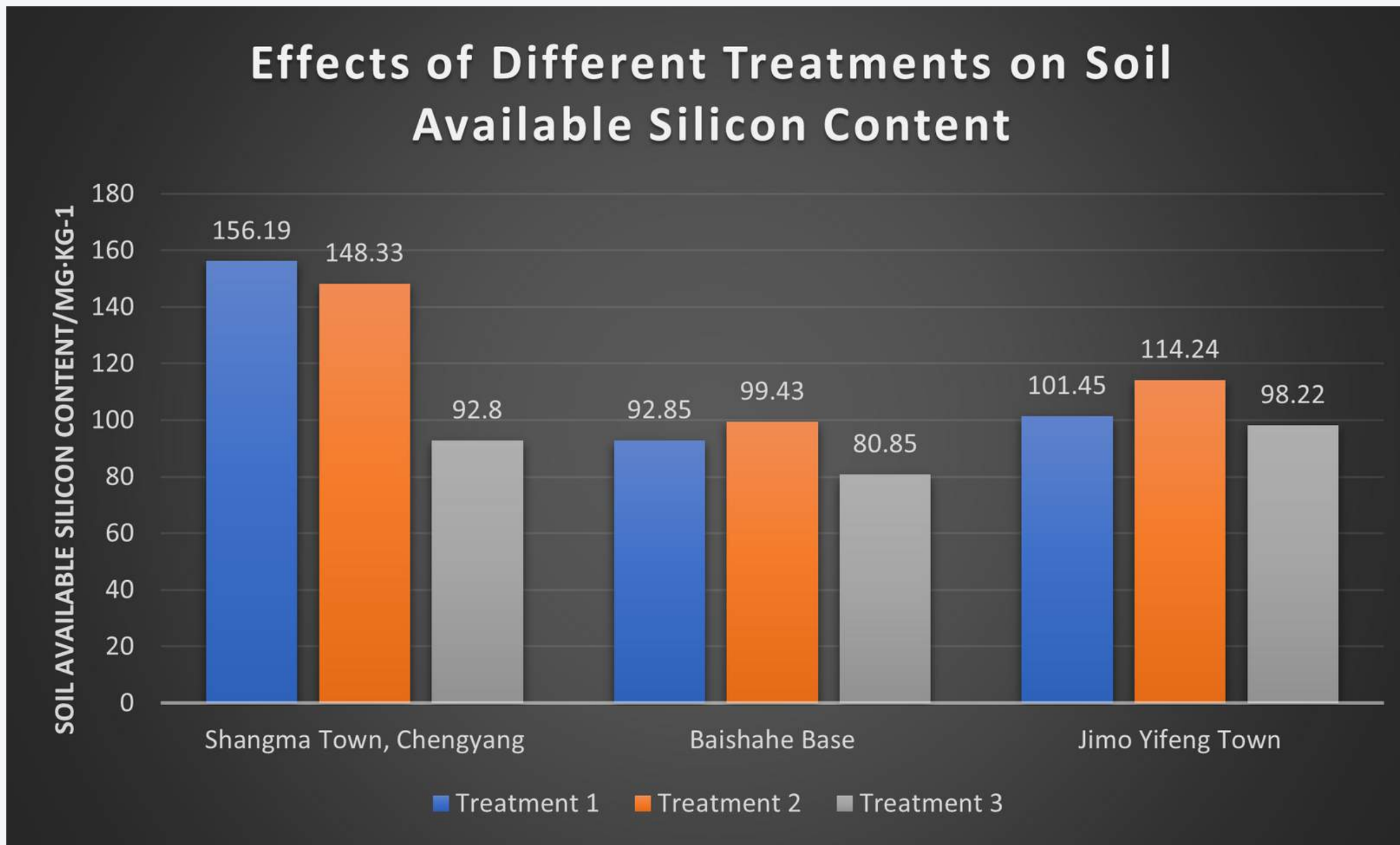


1. EcoSil: 3 000 mL/hm²

2. ComCat + EcoSil + AnnGro: 150 g/hm² + 3 000 mL/hm² + 150 ml/hm², respectively

3. Control: conventional method

Applications and Results

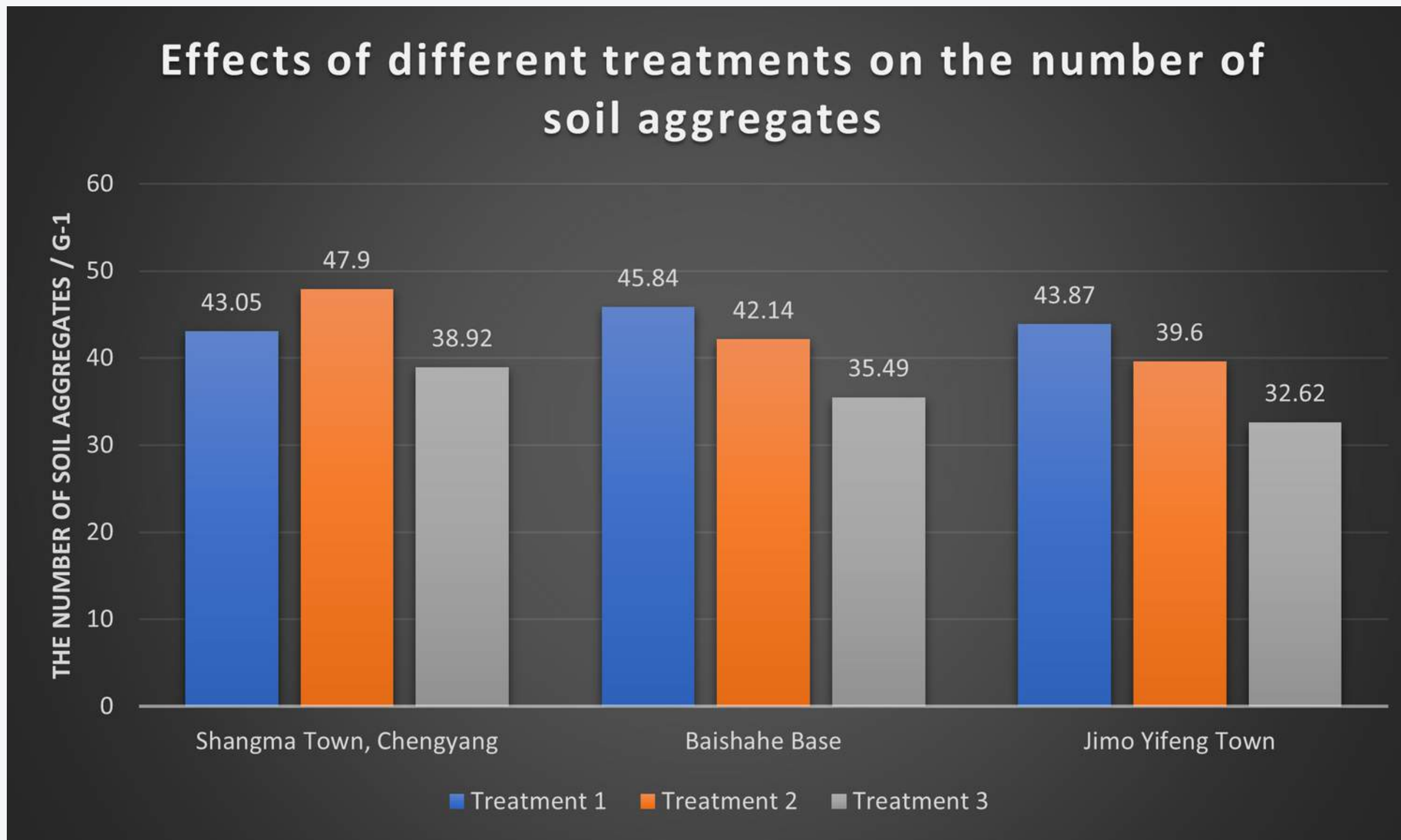


1. EcoSil: 3 000 mL/hm²

2. ComCat + EcoSil + AnnGro: 150 g/hm² + 3 000 mL/hm² + 150 ml/hm², respectively

3. Control: conventional method

Applications and Results

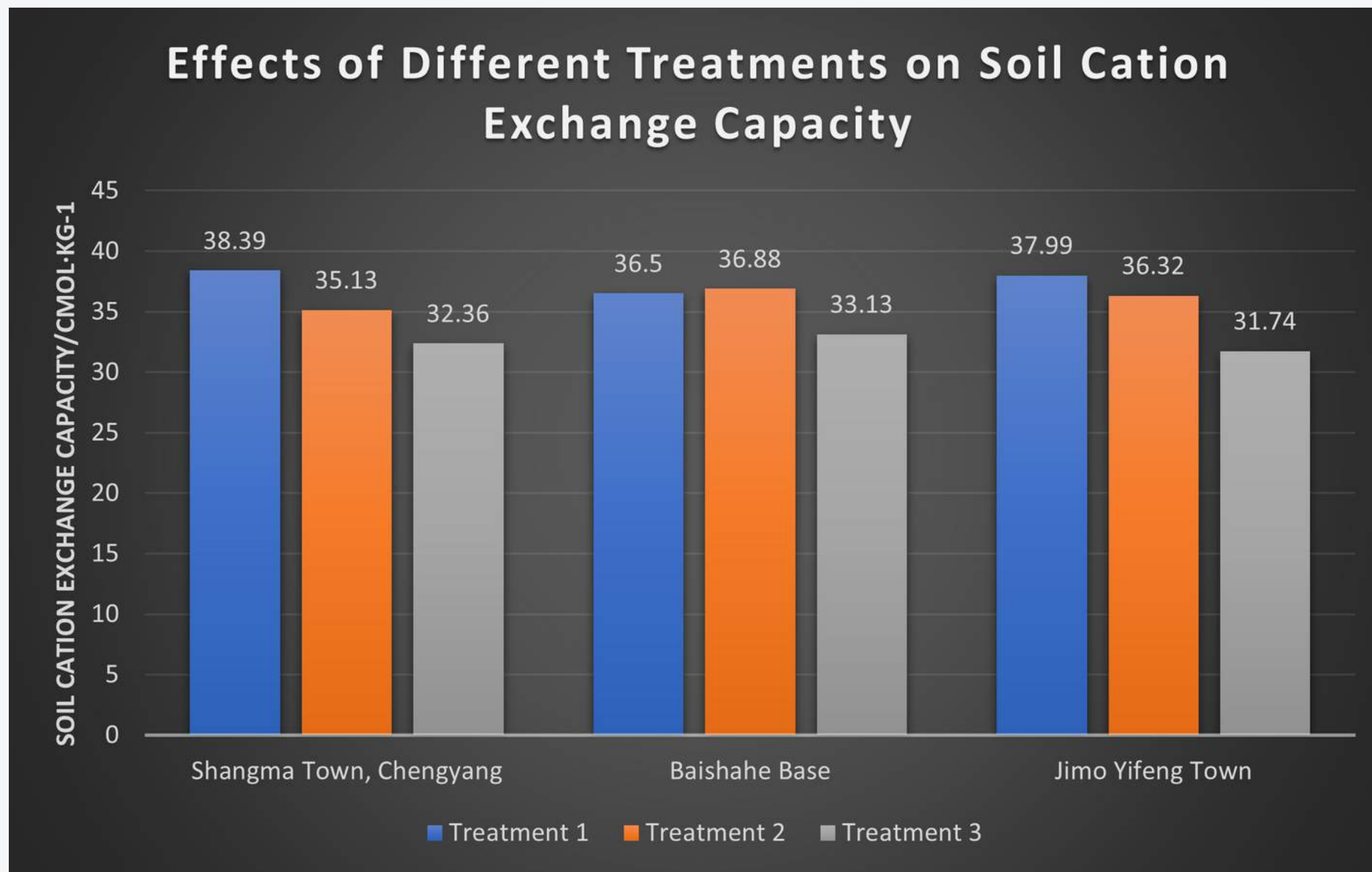


1. EcoSil: 3 000 mL/hm²

2. ComCat + EcoSil + AnnGro: 150 g/hm² + 3 000 mL/hm² + 150 ml/hm², respectively

3. Control: conventional method

Applications and Results



1. EcoSil: 3 000 mL/hm²

2. ComCat + EcoSil + AnnGro: 150 g/hm² + 3 000 mL/hm² + 150 ml/hm², respectively

3. Control: conventional method



Conclusion

- Experiments show that the application of silicon fertilizer EcoSil can significantly improve soil chemical properties, increase the number of microorganisms, enhance the activity of soil enzymes, improve soil fertility.
- Monosilicic acid and polysilicic acid in EcoSil exist in a colloidal state. Their agglomeration can be combined with organic matter and inorganic matter in the soil to promote soil formation of soil aggregates, thus making the soil loose and porous and well maintained moisture status and aeration while increasing soil cation exchange capacity and soil. The pH value of the soil improves the soil's ability to retain water and fertilizer.
- The study concluded that application of silicon fertilizer EcoSil, ComCat, and AnnGro could significantly improve soil physical and chemical properties, increase microbial number and soil enzyme activity, improve soil fertility.

高活性融地美对保护地土壤改良的效果研究

张瑞萍^{1,2} 胡荣娟¹ 夏爱萍¹ 束放³ 魏佳峰¹ 左娇^{1*}

(¹北京成禾佳信农资贸易有限公司,北京 100025;

²江苏爱佳福如土壤修复有限公司,江苏南通 226000;

³全国农业技术推广服务中心,北京 100026)

摘要 为明确融地美改良土壤的效果,以青岛市保护地土壤为研究对象,设计硅肥融地美和碧护营养套餐冲施等处理的试验示范。结果表明:施用硅肥融地美可明显提高土壤团聚体数量,较对照增加 10.61%~34.49%;土壤阳离子交换量较对照增加 8.56%~19.69%;土壤 pH 值提升 0.03~0.44;土壤有效硅含量最高增幅达到 68.31%;土壤交换性钙含量提高 25.90%;细菌、真菌、放线菌数量分别增加 45.45%、101.36%、247.06%;土壤脲酶和磷酸酶活性分别增加 24.66%和 42.55%。因此,施用硅肥融地美可明显改善土壤理化性质,增加微生物数量及土壤酶活性,提高土壤肥力,建议在土壤改良中进一步示范推广。

关键词 融地美;保护地;土壤改良;肥力

中图分类号 S156 文献标识码 A

文章编号 1007-5739(2021)04-0159-05

DOI:10.3969/j.issn.1007-5739.2021.04.069

开放科学(资源服务)标识码(OSID):



Effect of High Activity EcoSil on Soil Improvement in Protected Land
ZHANG Ruiping^{1,2} HU Rongjuan¹ XIA Aiping¹ SHU Fang³ WEI Jiafeng¹ ZUO Jiao^{1*}

Thank you for your attention!

Please reach out or visit our website for more information:

Jim: (559) 909-4774

Steve: (559) 269-4824

Website: www.sgcropsolutions.com