

## Discussion on the relationship between Wuyishan tea quality and geochemistry background characteristics

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**Abstract:** In order to evaluate the relationship between tea quality and soil geochemistry background in the main productive areas of Wuyi Rock Tea, we report the soil physicochemical characteristics and essentials of tea quality (e.g. tea polyphenols, caffeine and amino acid). These facts, as well as previous data are used for bivariate correlation and linear regression analyses and evaluate the influence of different geology backgrounds on tea quality. Those analyses indicate that tea polyphenols contents are positively correlated with pH values, but negatively correlated with Ni abundances of the soil, the caffeine contents, are positively correlated with Cu, and amino acid contents are positively correlated with pH values and K content. In addition, the contents of tea polyphenols and amino acid increase with the increase of pH values, K and Cu values, respectively, suggesting the K and Cu of the soil would accelerate the formation of amino acid and caffeine but Ni would inhibit the accumulation of tea polyphenols. Thus, the quality of tea in different geology backgrounds is shown as red bed area > Qpal area > metamorphic rock area > fine sandstone area.

**Key words:** tea; quality component; soil element; correlation analyses; linear regression analyses

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