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## Preserving the plant partner: how copper affects plant-bacteria symbiosis

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## **Preserving the plant partner: how copper affects plant-bacteria symbiosis**

Many plants form a symbiosis with soil bacteria. This mutually beneficial partnership provides a home for the bacteria, which in turn produce hard-to-get-nutrients and protect the plant from disease. Legumes like soybeans and chickpeas partner with specific bacteria called rhizobia that give them nitrogen. Nitrogen is an essential element for all life, but it normally exists in an inaccessible form. Legumes create protective nodules in their roots to house the rhizobia, and in return the rhizobia make the nitrogen accessible using an enzyme. This enzyme is essential to symbiosis but is also very sensitive to degradation by oxygen. Heavy metals like copper are often released into the environment. These metals may have a detrimental effect on the symbiosis between legumes and rhizobia because of their ability to induce oxidative stress. I am studying the oxidative stress caused by copper and how this affects the plant-bacteria partnership.