



## Article

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### Reciprocal rewards stabilize cooperation in the mycorrhizal symbiosis.

Kiers ET, Duhamel M, Beesetty Y, Mensah JA, ..., West SA, Vandenkoornhuysen P, Jansa J, Bücking H Science. 2011 Aug 12; 333(6044):880-2

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## Evaluations

Classification Key

Evaluated by [Maurice Sabelis](#) NEW 10 Oct 2011

**Toby Kiers and colleagues have provided an elegant proof that nutrient exchanges between plants and arbuscular mycorrhiza (AM) are not controlled by the plant alone but obey the rules of reciprocity, whereby plants donating more carbon received more phosphorous, and the fungi donating the most phosphorous received the most carbon in return. This is particularly interesting, because AM fungi create networks of contacts with several individual plants, and each plant (or possibly even a single root of a plant) is colonized by multiple networks of AM fungi. The research team showed that the plant can discriminate between different AM fungi along the same root segment.**

Probably, these symbiotic partners have no equal control over nutrient exchange, because the plant can acquire phosphorous in other ways than via AM, whereas AM fungi completely depend on the plant for carbon. Moreover, plants and AM fungi do not only trade carbon against phosphorous, but AM fungi may also provide nitrogen or they may improve soil conditions for the plant. Thus, it remains to be shown how plants respond to nutrient gifts depending on the environmental situation.

Competing interests: None declared

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