

Termites travel with fungi as take-away food

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Worker termite. Credit: Wikimedia

Fungi travelled to Madagascar in the intestines of termites. Fungus serves as a source of food and helps in cellulose conversion.

Termites which formed colonies on the island of Madagascar took with them fungi living with them in symbiosis. This is stated in an article by post-doc student Tânia Nobre of the Laboratory of Genetics of Wageningen Universit. The article, with co-author Duur Aanen, also from Genetics, is published this week in the British journal [Proceedings of the Royal Society B](#).

'The termite colonies on Madagascar have, so to speak, brought their own seed potatoes with them, just like farmers moving to new settlements', explains Nobre.

The female [termites](#) harboured fungus spores of the species

Termitomyces in their intestines. Fungus and termite therefore travelled inseparably from the mainland to the island off the South African coast. This vertical transmission had an evolutionary advantage during the long distance travel and the subsequent colonization 'We date this unique combined transport to the hitherto termite-free island to 13 million years ago', says the Portuguese termite expert.

To unravel the evolutionary history of termites and fungi, the Wageningen researchers reconstructed genealogies of present day termites and fungus varieties. The termites were collected in Africa and Madagascar between 2000 and 2006. In the laboratory in Wageningen, DNA have been isolated from more than 150 different termite colonies and their symbiotic fungi.

Termites live in tropical and sub-tropical areas. A queen and a king are at the head of each colony. Countless numbers of workers and soldiers build the nest and supply the food. For some termites, the fungi are important sources of food. They also help the insects to break down hardly digestible plant materials into manageable mouthfuls.

Most of the termite species pick up fungi from their surroundings when a new colony is formed. The Wageningen research shows that all the termite colonies on [Madagascar](#) originate from a single joint emigration of termites and [fungi](#) from Africa to the island, perhaps with the wind, on driftwood or with help from birds, suggests Nobre.

Provided by Wageningen University

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