

# Seeds from the Moringa tree can be used for water purification

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Pure water is a key requirement for good health and alternative cheap, safe methods are required in many countries. In a paper that has just been published in the leading American Chemical Society journal on interfaces, *Langmuir*, researchers from Uppsala University in co-operation with The University of Botswana describe how extracts from seeds of the Moringa oleifera tree can be used for water purification.

Flocculation of particulate impurities is a common first stage in purification of water. This often uses addition of either [aluminium](#) or iron salts. Aluminium, particularly, has undesirable health implications. An alternative procedure that uses a natural extract from [seeds](#) of the Moringa oleifera tree is used in Africa.

Research in a paper that has just appeared in the leading American Chemical Society journal on interfaces, *Langmuir*, describes how very small amounts of the protein from these seeds can bind strongly to surfaces and thus would cause contaminant particles to aggregate. The Scattering Centre at Ångström Laboratory and the Department of Physics and Astronomy at Uppsala University is a centre of expertise in exploiting a powerful technique known as neutron reflection to measure structure and composition of layers of just a few nanometres (millionths of a millimetre) at the interface between a solid and a liquid.

A co-operation with the University of Botswana where there is a long interest in exploiting natural products has led to a research project that provides important insight in to the way that [protein](#) molecules from the

Moringa oleifera seeds interact, binding strongly both to each other and surfaces so as to cause aggregation into large lumps that are readily removed from the water.

"It is nice to see how the basic interactions of molecules can play a role in solving practical problems," says Adrian Rennie, Professor at the Department of Physics and Astronomy at Uppsala University.

"Understanding of the process may lead to further development in [water purification](#) with materials that are locally available and environmentally friendly."

**More information:** [pubs.acs.org/doi/abs/10.1021/la9031046](https://pubs.acs.org/doi/abs/10.1021/la9031046)

Provided by Uppsala University

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