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Flower bulbs to treat Alzheimer's



The substance galanthamine from flower bulbs can fight symptoms of Alzheimer's disease. Nadeem Akram investigated how daffodils can optimally produce this natural remedy. PhD defence on 24 June.

Nadeem Akram will defend his dissertation, which he has been working on for years, all the way from Pakistan. It was not easy to complete his thesis being in Pakistan, but now he can finally obtain his doctorate. His doctoral thesis is entitled Factors affecting galanthamine production in Narcissus, a study that focused on daffodils. The bulbs of daffodils and other species in the daffodil family contain galanthamine, a natural substance used in Alzheimer's disease (see frame).



Bulbs from the backyard

Together with flower bulb growers in the vicinity of Leiden, Akram investigated which factors play a role in the production of galanthamine in the flower bulb. Among other things, he studied the effect of fertilizing, which place and method of cultivation are best, and how and when to top the flower, so that the plant puts energy into the bulb instead of the flower. Everything for the highest possible galanthamine level in the daffodil bulb. Akram's supervisor at the Institute of Biology Leiden Robert Verpoorte, Professor emeritus of Pharmacognosy, in particular plant cell biotechnology, says that the research has helped to produce high-quality bulbs for the international market of extraction companies.

Akram's research is an example of the connections that the Institute of Biology Leiden has with growers in the Leiden region. Verpoorte: 'The collaboration between the University and growers of bulbous plants in the "backyard" of Leiden University and the centuries-long history of the bulbs has resulted in a great deal of knowledge exchange in recent decades. Nadeem's work is an example of this.'

Galanthamine as a medicine

Galanthamine is used in Alzheimer's disease to reduce certain symptoms. In Alzheimer's, there is less acetylcholine present in the brain. Acetylcholine is necessary for the transfer of information in the brain. Galanthamine increases the availability of acetylcholine. This way, the information transmission remains intact longer. It can have a positive effect on attention, concentration and speech.

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