

OPINION

Plants for thought

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The title may be misleading in suggesting that plants think, even though this is an interesting question. The argument here is how plants have evolved either by accident or by some 'natural' intelligence to exert effects on our thoughts.

Over the millions of years of interaction between the plant kingdom and the animal kingdom a close and vital link has emerged. This is mainly linked to the former for providing nutrition in the form of sugars, but also lipids and proteins vital for all forms of life, especially us humans who do not possess the biochemical machinery to generate our own food. Apart from nutrition per se plants can also influence our thoughts, mood and cognition. Recent research has shown that components from plants can affect our health positively such as resveratrol from red wine which can provide protection against cardiovascular disease (French paradox) and in experiments from worms to fruit flies to mammals, it can augment biochemical pathways that increase longevity. The question is whether plants can really influence our thoughts? And if so why? It sounds like something out of science fiction. Well from nutritional point of view the levels of carbohydrates, proteins, lipids, vitamins and minerals as well as antioxidants and other biological modifiers found in a plant diet would influence the organic makeup of the CNS as well as its function (Virmani *et al.*, 2013). 'We are what we eat after all' as stated by Anthelme Brillat-Savarin in 1826. What about a nice cup of tea (Chamomile) or coffee, aren't the plant ingredients in these common drinks altering our brain activity? Indeed there are plants such as St. Johns Wort (*Hypericum perforatum*) that have been used as remedies against mild to moderate depression (Sarris, 2013). This plant contains several compounds, including hypericin, hyperforin, and flavonoids and may influence monoamine neurotransmitters in the brain

similar to pharmacological antidepressant agents such as the selective serotonin reuptake inhibitors (SSRI).

Of course there are other plants that can affect the brain neurotransmitters much more strongly. These range from tobacco (nicotine) to Coca plants (Erythroxylaceae) from which cocaine can be extracted. The fact that the plant produces these chemicals does not mean that it is the fault of the plant that people abuse these substances but rather that these substances by the accident or design of nature are highly addictive for the way our brains operate. On the whole however, plant based diets are healthier than eating meat, indeed people on vegetarian diets have been reported to be less aggressive but also happier and less stressed. The reduction in aggression and especially the improvement of mood was shown in a recent study where improved mood states were noted after only two weeks of eliminating meat, fish and poultry from the diets and substituting for vegetarian diet (Beezhold, 2013).

The role of plants on our health and especially on our mental health needs to be investigated by more interdisciplinary studies.

References

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