

## International Forest Garden / Food Forest symposium 2021

“Food Forest’s future role: feeding the world.”

Since it was not possible to address many of the questions popping during the chat and Q&A after my presentation (starting Thursday 9 BST on June 3th) I try to answer them here, using numbers for the ease of separating (and sometimes combining).

Thanks for showing attention! Wouter van Eck

- 1) On *Toona sinensis* (loaden with nutrients as Eric Toensmeier has showed): in my opinion the young leaves are delicious, tasting like French onion soup. It certainly has ‘umami’, probably due to for leaves surprisingly high content of protein, see also: <https://avrdc.org/chinese-toon-toona-sinensis> . Taste might differ due to different varieties. Sometimes this species is sadly enough swapped with ‘tree of heaven’ *Ailanthus altissima* (have an offensive odour and possibly poisonous...). Emile van der Staak (friend and chief cook) is also using older leaves of *Toona sinensis* - being too fibrous for salad or stir-frying - by crushing them before storing them in oil (the oil eventually becomes very flavorful). Last not least: he is using the wood cuttings (we prune to stimulate new shoots) for making a broth. More on his outstanding gastronomical skills: <https://guide.michelin.com/en/gelderland/nijmegen/restaurant/de-nieuwe-winkel>
- 2) I never heard about sweet chestnuts causing gastritis and this also is not my own experience... Has anyone else found this relation? Maybe there is a mistake with the translation of those old Greek people being mentioned? These insights actually are claiming the opposite being true: “Boiled, chestnuts have demulcent properties suitable for irritated stomachs (gastritis, ulcers, etc.) and is recommended for intestinal disorders such as diarrhoea.” From: <https://www.botanical-online.com/en/medicinal-plants/chestnuts>
- 3) Thanks to those showing interest in my breakfast. I had some crackers based up on chestnut flour (still not flatulating BTW – see 2), gooseberry marmalade, homemade ‘pesto’ containing walnuts and Cathay quince plus syrup from apples and pears. Please, be aware, as a food forest farmer it is not forbidden to eat other products, from other farms (for instance French fries). I also think it might be wise for our farming neighbours do eat other things than dairy alone...
- 4) As with most cropping systems food forest in temperate climates also will not give huge harvests during winter, although some sturdy herbaceous ones like purslane and cresses still will offer fresh leaves. Techniques as fermenting, drying, brewing, canning and so on can help to have harvest longer available (see 3). Some apple varieties store well from November till May. Japanese walnuts are still fine after three years (as is the craft beer with sea buckthorn).
- 5) I am in favour of fair wages for agricultural work. For the bigger 20 ha food forest we implemented this in a calculation. We do expect to create more and better paid jobs with food forests than growing fodder does.
- 6) ‘Trees mainly eat air’: CO<sub>2</sub>, H<sub>2</sub>O and N all arrive (originally) via air and will become most of the weight of the biomass of the plants. Water is arriving to the tree directly from the air via rain, dew and the inhalation of water vapor. Or indirectly via first raising the water table or a stream. The carbohydrates (produced in the solar driven photosynthesis

process) are partly delivered to the soil food web, which in exchange will provide mined phosphorus and micronutrients out of bare rock or sand.

- 7) Once this was a bare and empty planet. Before humans started agriculture most of the terrestrial surface was forested. This sounds wonderful (it actually is) but is also just the outcome of the process described under 6. That's why we really do not 'have to add the same amount' in a food forest after harvesting. A rule of thumb for at least a few centuries is things go well with fertility as long as the total amount of increase in biomass is increasing. I recommend to take a look at the calculations done by Niek Pepels. You can download his thesis via this link: <https://greendealvoedselbossen.nl/do-food-forests-need-fertiliser> In a vegetable garden or on a field used for annual cropping people certainly do have to add nutrients brought from elsewhere (since each year part of it will be lost for the roots of annual plants),.
- 8) Sand is as fertile as bedrock as clay. Not if you want to grow cauliflower, but this is true for growing trees (see also 6 and 7).
- 9) Nuts are having a key role in a healthy diet (best unsaturated fatty acids, good in protein). For EU and UK, it is quite silly to import them from Turkey, China or California (in these regions people should eat these healthy products themselves), since they can grow well in our own landscapes. Source of inspiration: Martin's book: 'How to grow your own nuts'.
- 10) Martine mentioned a certain mister Sukkel stating 'the yield in calories of sugar beets 3 times higher than the yield from nuts and fruits in a food forest'. I do not know why he is telling this since he is not familiar with a food forest system (has not done research on it and has not shared any calculation). I do know high intake of calories of sugar beet (and even wheat) is related to a lot of severe life style diseases. I do also know immense amount of fossil fuels are used for growing those crops in monoculture.
- 11) Sure, we need calories, but we do need nutrients as well. These latter seem to be neglected too much! Caloric staple production should become less dominant in our diet (see the EAT-project by The Lancet).
- 12) A scientific elaborated research has been done on nesting birds, nocturnal butterflies and creeping beetles in our food forest, compared with a nearby nature reserve (being well protected Natura 2000). Outcome: levels of species and amounts of these indicator groups are same or higher in the food forest! Publication in Dutch: <https://docplayer.nl/62288903-Jeroen-breidenbach-emma-dijkgraaf-bastiaan-rooduijn-roos-nijpels-cieremans-arjen-strijkstra-90-de-levende-natuur-jaargang-nummer-3.html>
- 13) "Do you consider adding animals?" We already have that many animals! Our food forest is packed with many different species (it is joy to meet other mammals as Beaver! Badger! Fox! Weasel! Hare!). Not to mention the countless birds singing and nesting, hundreds of different nocturnal butterflies on the screen of the entomologists, light show organized by fire flies at summer evening, snake sunbathing at afternoon ("because it's like paradise" noted a visitor). Husbandry would mean kicking wildlife out. Do you really want to increase the burden of cows, pigs, goats and chickens already severe damaging biodiversity and climate on this planet? Do you need to make a fence? Do you feed them in winter? Wherefrom? Do you let them damaging soil life (since they are locked up) with trampling and over-manuring (and thus killing the essential mycorrhiza system)? See also: <https://www.darrinqualman.com/humans-livestock-extinctions>
- 14) There is some misunderstanding about manure being needed for fertilisation. In reality the 'humble earthworms' (as Charles Darwin nicknamed them) will have a much better ratio in converting biomass into fertile soil. Big mammals have to heath and carry their body,

- wherefore a lot of energy is being used (and ends up being greenhouse gasses). The worms can add most of that very same carbon to the soil, where it will be quite useful.
- 15) Some obstacles for implementing are ignorance (see 10), regulations being too strict, initial costs before the system being profitable, ...
  - 16) The theoretical design and the calculations made by Yann Boulestreau do offers inspiration and knowledge for scaling up food forests. It is not meant to be copied, since a design should consider local conditions as water table, hardness zone and preferred future farming methods.
  - 17) Our foundation Stichting Voedselbosbouw works with both conventional farmers (changing part of their land practice) as new farmers who recently gained access to land. We are currently involved with around 200 hectare of farming land being converted.
  - 18) Funding is welcome to support more farmers in this transition... Someone seems to have suggested Danone for this nice role. However, we want to avoid greenwashing. So if Danone wants to help saving the planet it is also needed for the company to shift gradually from dairy to plant-based products.
  - 19) Some of the sources behind the info graphic on land use (slide 18 of my presentation): on carbon sequestration, see <http://carbonfarmingsolution.com/carbon-sequestration-rates-and-stocks> on biodiversity nr 12 above and <https://www.ecologyandsociety.org/vol26/iss2/art6/> on climate resilience slide 15 of my presentation.
  - 20) Thanks for the many nice remarks, best wishes to all participants of this very special symposium!

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