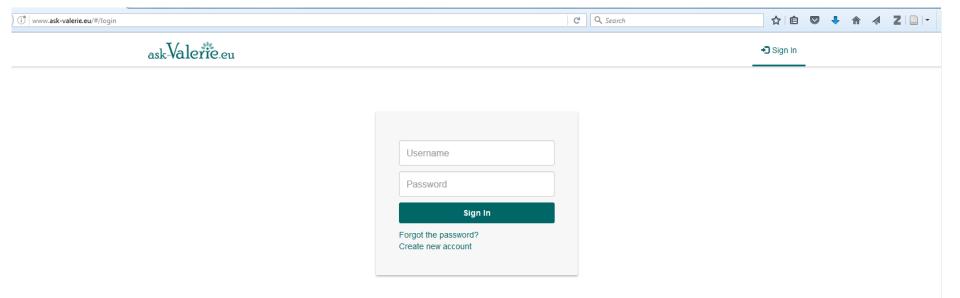
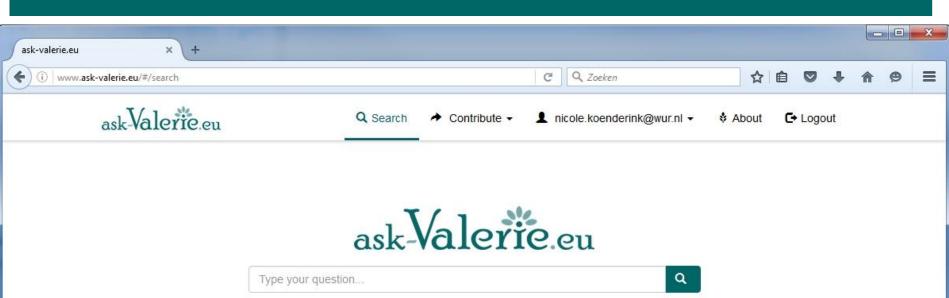
Ask Valerie-testaus Joensuu 29.11.2016 Michael den Herder



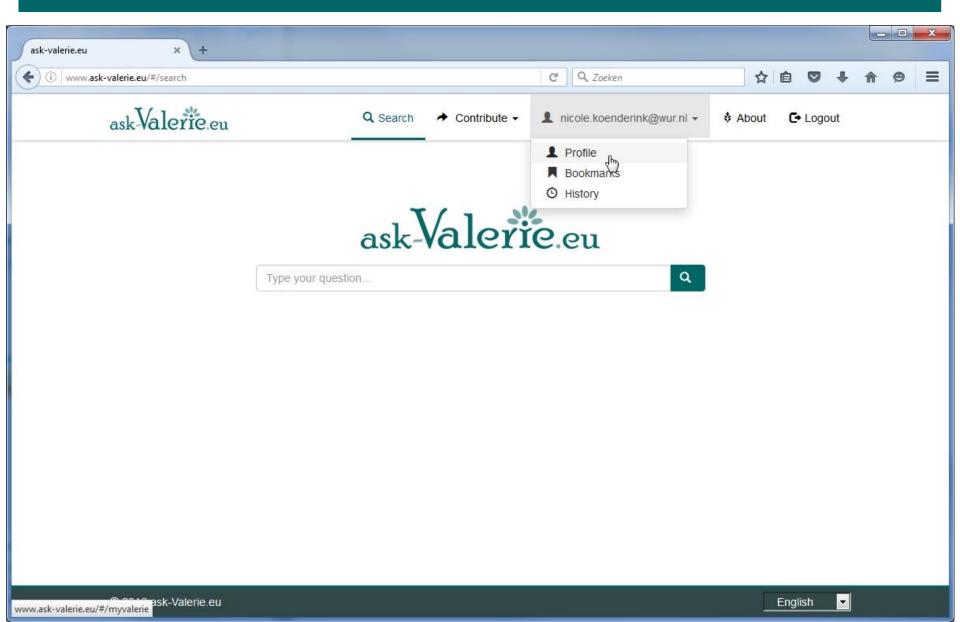




English

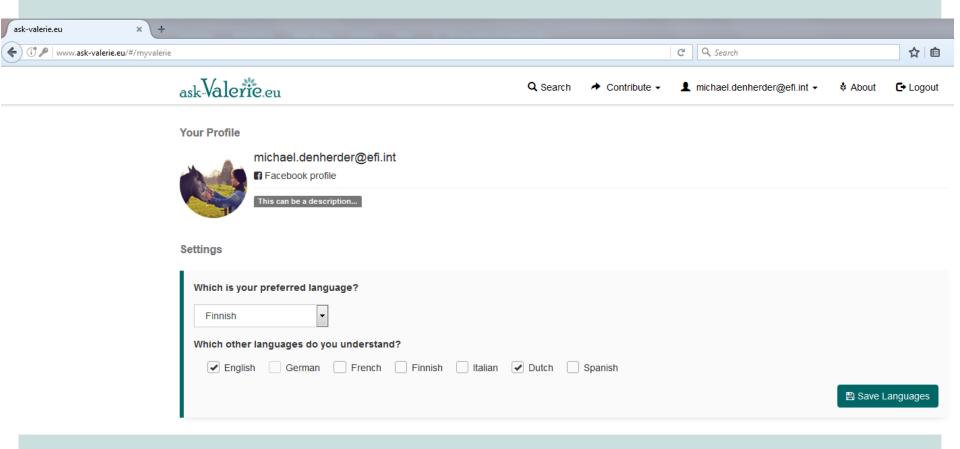








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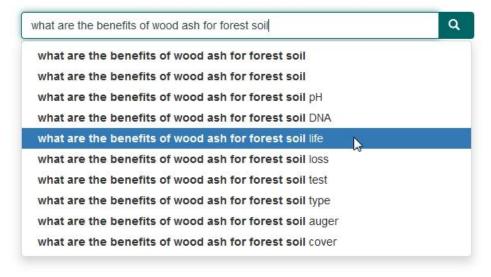
- If one or more languages are selected, autocompletion is on those



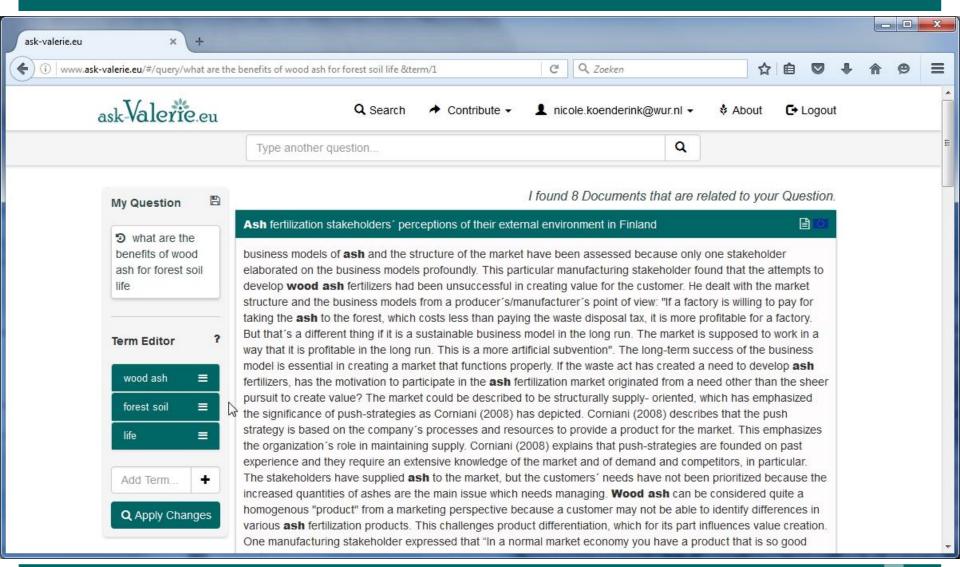




ask Valerie eu









what are the benefits of wood ash for forest soil life

Term Editor

wood ash

 \equiv

Refine

rakeinen puutuhka

> Broade

sivutuote

Add Related Term

boori

kadmium

🛨 tiili

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arseeni

tienrakennus

+ kalium

🛨 typpi

+ typpilannoitus

puutuhkalannoitus

rakeistus

 puutuhkan kierrätys

metsätie

Remove Term

forest soil =

Wood ash use in forestry ♦ a review of the environmental impacts

i

Alloway (1995) has shown that pH, organic matter and hydrous oxide content are the key factors con- trolling Cd adsorption into soils. **Wood ash** with high Cd compounds has reduced risk of this metal leaching, as it bonds with hydrous Mn oxides, through a wide range of soil pH's (Mn is plentiful in both bottom and fl y ash) and with hydrous iron oxides (common in many mineral **forest soils**). [page 11]



Indicators of soil quality for UK forestry



Although heavy metals exist naturally as products of mineral weathering in **forest soils**, potential anthropogenic sources include atmospheric pollution (mainly as a result of industrial activity during the twentieth century) and organic fertilizer application, such as sewage sludge and **wood ash**. The metals can become tightly bound to organic exchange sites in the soil, and there is some concern that a reduced supply of essential exchangeable nutrients will ensue. More common though are reports of negative correlations between heavy metal concentrations and soil flora and fauna populations (Kowalski et al., 1998) and the possible implications of these on soil functioning. [page 7]



Recycling of ash � For the good of the environment?



Both the positive and negative outcomes of ash application, e.g., immobilisation of heavy metals and increased CO2 emissions, lar-gely depend on the neutralising effects of ash on soil acidity. Thus, the most crucial question that remains to be answered is how long this neutralising effect will last, and what happens thereafter. The answer will most likely depend on the initial acidity of the site and the amount of ash added. In an acidic peat- land site, addition of 8–16 Mg ha1 of birch **wood ash** has led to changes that have persisted for more than 50 years (Moilanen et al., 2002). Although short-term impacts seem to indicate otherwise, monitoring of the oldest, well-described ash fertil- isation sites is also needed for evaluating whether heavy metals start to accumulate in the food web or leach into watercourses in the long run. [page 12]

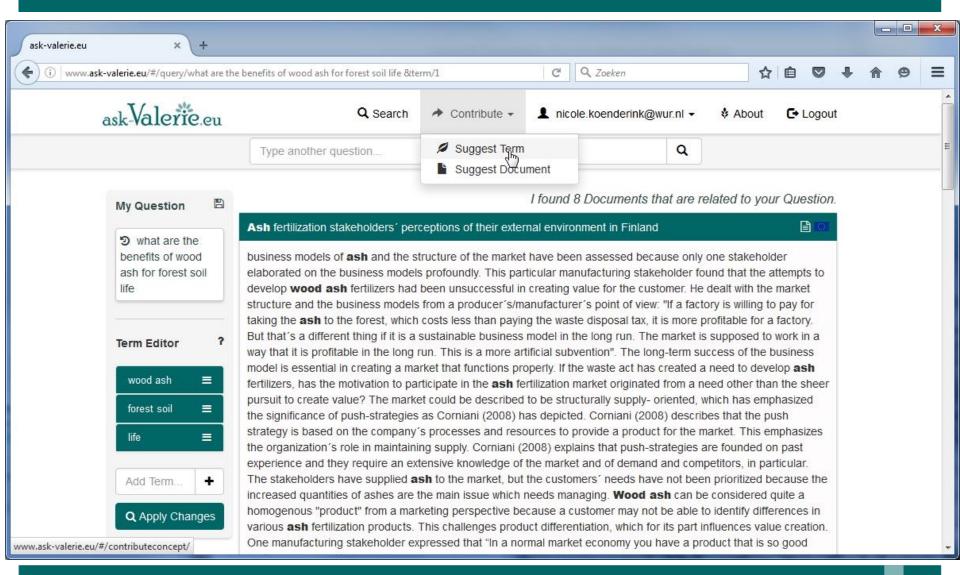


Options for increased utilization of ash from biomass combustion and co-firing



Based on a comprehensive study performed by BIOS Bioenergiesysteme GmbH in Austria (Obernberger, 2009), the Austrian R&D project —Development of innovative processes for **wood ash** utilizationII was initiated and started in December 2009. The project deals with the chemical and physical characterization of different wood ashes, the ash balances for different biomass combustion plants and the theoretical and practical investigation of different utilization technologies. Examples of utilization of wood ashes investigated are on short rotation coppice sites, as an additive to the composting process (Obernberger, 2010), as a binding material in road construction (Supancic, 2011) and as a building material in forest road construction. [page 26]





Known issues



- A txt-document does not open when clicking download
- The language flags of the document are incorrect when searching for more than one term
- Alphabetical ordering, and choice of labels in Term Editor can be improved