Plant Power

Grace, Olwen; Lovett, Jon C.; Gore, Charles J. N.; Moat, Justin; Ondo, Ian; Pironon, Samuel; Langat, Moses K.; Pérez-Escobar, Oscar A.; Ross, Andrew; Abbo, Mary Suzan; Shrestha, Krishna K.; Gowda, Balakrishna; Farrar, Kerrie; Adams, Jessica; Cámara-Leret, Rodrigo; Diazgranados, Mauricio; Ulian, Tiziana; Sagala, Saut; Rianawati, Elisabeth; Hazra, Amit

Published in:
Plants, People, Planet

DOI:
10.1002/ppp3.10147

Publication date:
2020

Citation for published version (APA):
Grace, O., Lovett, J. C., Gore, C. J. N., Moat, J., Ondo, I., Pironon, S., Langat, M. K., Pérez-Escobar, O. A., Ross, A., Abbo, M. S., Shrestha, K. K., Gowda, B., Farrar, K., Adams, J., Cámara-Leret, R., Diazgranados, M., Ulian, T., Sagala, S., Rianawati, E., ... Wilkin, P. (2020). Plant Power: Opportunities and challenges for meeting sustainable energy needs from the plant and fungal kingdoms. *Plants, People, Planet*, *2*(5), 446-462. https://doi.org/10.1002/ppp3.10147

Plants, People, Planet **Supporting Information**

Article title: Plant Power: Opportunities and challenges for meeting sustainable energy needs from the plant and fungal kingdoms

Authors: Olwen M. Grace, Jon C. Lovett, Charles J.N. Gore, Justin Moat, Ian Ondo, Samuel Pironon, Moses K. Langat, Oscar A. Pérez-Escobar, Andrew Ross, Mary Suzan Abbo, Krishna K. Shrestha, Balakrishna Gowda, Kerrie Farrar, Jessica Adams, Rodrigo Cámara-Leret, Mauricio Diazgranados, Tiziana Ullian, Saut Sagala, Elisabeth Rianawati, Amit Hazra, Omar R. Masera, Alexandre Antonelli & Paul Wilkin

The following Supporting Information is available for this article:

Methods S1 Methodology for systematic review (Box 2)

Table S1 Findings of systematic reviews of the literature

Methods S1

Keyword searches were carried out in English in two bibliographic databases for articles published > 2014 (Scopus and Web of Science) and the resulting lists of articles exported to the reference manager Zotero. Duplicates were removed and articles screened by the title and abstract. The articles were kept unless there was clear information to justify exclusion.

How are fungi enhancing bioenergy recovery from plants?

(TITLE-ABS-KEY(Fungi OR Fungal) AND TITLE-ABS-KEY(Bioenergy OR Biofuel OR Biodiesel OR Bioelectricity OR Biogas) AND TITLE-ABS-KEY(Plant OR Plants)) AND PUBYEAR > 2014

How are new sources of energy from plants identified?

(TITLE-ABS-KEY(Plant OR Plants) AND TITLE-ABS-KEY(New OR Novel OR Discovered OR Discovery OR Discover OR Identified OR identify OR "new source" OR source OR "novel energy crop" OR "new energy crop") AND TITLE-ABS-KEY(phylogenetic OR phylogenetics OR phylogenomic OR phylogenomics OR phylogeny OR predictive OR prediction OR "tree of life" OR trait OR "QTL mapping" OR "Quantitative trait locus") AND TITLE-ABS-KEY(lignin OR cellulose OR lignocellulose OR "lignocellulosic biomass" OR carbohydrate OR carbon OR fats OR "fatty acids" OR oil OR oils OR "Oil biosynthesis" OR lipid OR lipids OR "lipid content" OR water OR biomass OR "vegetable oil" OR "vegetable fats" OR triglycerides OR triacylglycerols) AND TITLE-ABS-KEY(Bioenergy OR Biofuel OR Biofuels OR Biodiesel OR Bioelectricity OR Biogas OR Biohydrogen OR Bioethanol OR Biochar)) AND PUBYEAR > 2014

What are the risks and benefits of using plants for energy?

(TITLE-ABS-KEY(Plant OR Plants) AND TITLE-ABS-KEY(Risk OR risks OR Threat OR threats OR threaten OR threatens OR benefit OR benefits OR impact OR impacts OR "environmental impact" OR environmental OR ecological OR "ecological impact" OR cost-benefit OR "cost analysis" OR socio-economic OR contamination OR contaminated OR land-use OR erosion OR profit OR sustainable OR sustainability OR pollution OR degradation OR "Ecosystem services" OR ecosystem OR invasive OR Biodiversity OR "energy security" OR "energy poverty" OR "life cycle" OR "life cycle assessment" OR emissions OR emission OR "supply chain") AND TITLE-ABS-KEY(Bioenergy OR Biofuel OR Biofuels OR

Biodiesel OR Bioelectricity OR Biogas) AND NOT TITLE-ABS-KEY(Algae OR "algal-based" OR algal OR Microalgae OR Biotechnology OR "genetic engineering" OR "genetic modification" OR mutant OR improving OR improvement OR optimising OR optimizing OR optimisation OR optimization OR modification OR "livestock manure" OR "Meat processing waste" OR meat OR "livestock waste" OR "animal waste" OR "animal waste management" OR "manure management" OR manure OR "animal slurry" OR "natural gas" OR coal OR solar OR "wind power" OR "industrial plant" OR biorefinery OR bio-refinery OR "treatment plant" OR "waste treatment" OR "waste management" OR cyanobacterial OR "microbial diesel" OR petrochemical OR photovoltaic OR molecular OR nanoparticle OR pyrolysis OR "transposable elements" OR hydrolysis OR "enzymatic hydrolysis" OR "biogas plant" OR trichoderma OR Saccharomyces OR "Ex situ conservation" OR biochemical OR thermochemical OR "biochemical conversion" OR "Hydrothermal oxidation" OR "Chemical analysis" OR "chemical engineering" OR "lipid productivity" OR TAG OR "multiple fission" OR "Rankine cycle" OR Distillation OR extraction OR Transesterification OR "Value added product" OR Esterification OR Byproducts OR Purification OR assay OR "Microbial production" OR "Fermentation process" OR "Bioreactor landfills" OR Bioreactor OR Chromatography OR Chemometrics OR "nuclear magnetic resonance" OR "Growth promotion" OR "power plant" OR Saccharification OR "microbial oil" OR chemistry OR Molecules OR "Catalytic cracking" OR Thermophilic OR phosphorylation OR yield OR "Heat integration" OR biofilm OR "CHP plant" OR "muscle protein" OR "Broiler chickens" OR "Broiler chicken" OR "pig digestate" OR "pig slurry" OR "Microbial fuel cell" OR biojet OR storage OR "Chemical composition" OR "Engine performance")) AND PUBYEAR > 2014

Table S1. Findings of systematic reviews of the literature

Review question	Stage of process	Number of articles retrieved
How are fungi enhancing bioenergy recovery from plants?	Web of science	410
	Scopus	583
	Total after removing duplicates	693
	Total after abstract and title assessment	206
How are new sources of energy from plants identified?	Web of science	681
	Scopus	958
	Total after removing duplicates	998
	Total after abstract and title assessment	76
What are the risks and benefits of using plants for energy?	Web of science	706
	Scopus	999
	Total after removing duplicates	1,392
	Total after abstract and title assessment	376