

Document details

< Back to results | < Previous 63 of 165 Next >

→ Export ↓ Download 🖨️ Print ✉️ E-mail 📄 Save to PDF ☆ Add to List More... >

View at Publisher

Waste and Biomass Valorization
Volume 8, Issue 8, 1 December 2017, Pages 2881-2888

Study of the Mechanical and Energetic Properties of Pellets Produce from Agricultural Biomass of Quinoa, Beans, Oat, Cattail and Wheat (Article)

Alarcon, M., Santos, C., Cevallos, M., Eyzaguirre, R., Ponce, S. ✉️ 👤

Faculty of Industrial Engineering, Universidad de Lima, Lima, Peru

Abstract

∨ View references (24)

The lack of conventional fuels in rural areas in Peru drives people to burn agricultural wastes that are used as fuel. Burning these wastes produce a large amount of gaseous pollutants that harm the health of people, causing respiratory diseases primarily in children. This study determined the optimal conditions and relation between waste ashes and starch to produce pellets using wastes from Puno region in Peru with a high heating value and durability. The optimal content range was 30% starch and 70% of quinoa ashes, considering also the production of energy and the durability of the pellets. The relation between particle size, heating value, starch content and mechanical resistance was studied using an artisan pellets preparation method to allowed villagers the access to energy that they can prepared and storage. © 2017, Springer Science+Business Media B.V.

SciVal Topic Prominence ⓘ

Topic: Briquetting | Briquets | Fuel briquettes

Prominence percentile: 84.287 ⓘ

Author keywords

Metrics ⓘ View all metrics >

3 Citations in Scopus

0.36 Field-Weighted
Citation Impact



PlumX Metrics ∨

Usage, Captures, Mentions,
Social Media and Citations
beyond Scopus.

Cited by 3 documents

Strategic planning for the use of waste biomass pellets in Mexican power plants

Martínez-Guido, S.I. , Ríos-Badrán, I.M. , Gutiérrez-Antonio, C. (2019) *Renewable Energy*

Optimization of granular waste production based on mechanical properties

Ghasemi, A. , Chayjan, R.A. , Najafabadi, H.J. (2018) *Waste Management*

Organic waste to energy in Latin America and the Caribbean (Lac); state-of-the-art literature review

Beans Biomass Cattail Pellets Quinoa Wheat

Indexed keywords

Engineering controlled terms:

Agricultural wastes Agriculture Biomass Durability Fog Ore pellets Particle size Rural areas Starch

Engineering uncontrolled terms

Agricultural biomass Beans Cattail Energetic properties High heating values Mechanical resistance Quinoa Wheat

Engineering main heading:

Pelletizing

Funding details

Funding sponsor

Funding number

Acronym

United Nations Educational, Scientific and Cultural Organization
See opportunities by UNESCO

UNESCO

Funding text

Acknowledgements This work was supported by a Grant of Con-cytec, L'oreal and UNESCO "For Women in Science" Peru 2013, Project: Processing of agricultural wastes to fuel that can be used in kitchens of Andean rural areas with less environmental domestic impact.

ISSN: 18772641

Source Type: Journal

Original language: English

DOI: 10.1007/s12649-017-9983-0

Document Type: Article

Publisher: Springer Netherlands

Silva-Martínez, R.D. , Sanches-Pereira, A.
(2018) *European Biomass Conference and Exhibition Proceedings*

View all 3 citing documents

Inform me when this document is cited in Scopus:

Set citation alert >

Set citation feed >

Related documents

Pelletization of wood and alternative residual biomass blends for producing industrial quality pellets

García, R. , Gil, M.V. , Rubiera, F.
(2019) *Fuel*

Influence of moisture content, particle size and forming temperature on productivity and quality of rice straw pellets

Ishii, K. , Furuichi, T.
(2014) *Waste Management*

A comparative study of biomass pellet and biomass-sludge mixed pellet: Energy input and pellet properties

Jiang, L. , Yuan, X. , Xiao, Z.
(2016) *Energy Conversion and Management*

View all related documents based on references

Find more related documents in Scopus based on:

References (24)

View in search results format >



- 1 Li, X., Mupondwa, E., Panigrahi, S., Tabil, L., Sokhansanj, S., Stumborg, M.
A review of agricultural crop residue supply in Canada for cellulosic ethanol production

(2012) *Renewable and Sustainable Energy Reviews*, 16 (5), pp. 2954-2965. Cited 37 times.
doi: 10.1016/j.rser.2012.02.013

[View at Publisher](#)

- 2 Banzaert, A.
Viability of waste-based cooking fuels for developing countries: combustion emissions and field feasibility” S.B.,
Massachusetts Institute of
(1998) *Technology*

- 3 Nishiguchi, S., Tabata, T.
Assessment of social, economic, and environmental aspects of woody biomass energy utilization: Direct burning and wood pellets

(2016) *Renewable and Sustainable Energy Reviews*, 57, pp. 1279-1286. Cited 30 times.
doi: 10.1016/j.rser.2015.12.213

[View at Publisher](#)

- 4 Haykiri-Acma, H., Yaman, S., Kucukbayrak, S.
Production of biobriquettes from carbonized brown seaweed

(2013) *Fuel Processing Technology*, 106, pp. 33-40. Cited 29 times.
doi: 10.1016/j.fuproc.2012.06.014

[View at Publisher](#)

- 5 (2005) *WHO Air quality for particulate matter, ozone, nitrogen dioxide and sulfur dioxide. Technical Report*
World Health Institute, Geneva

- 6 Zamorano, M., Popov, V., Rodríguez, M.L., García-Maraver, A.
A comparative study of quality properties of pelletized agricultural and forestry lopping residues
(2011) *Renewable Energy*, 36 (11), pp. 3133-3140. Cited 50 times.
doi: 10.1016/j.renene.2011.03.020
[View at Publisher](#)
-

- 7 Karkania, V., Fanara, E., Zabaniotou, A.
Review of sustainable biomass pellets production - A study for agricultural residues pellets' market in Greece
(2012) *Renewable and Sustainable Energy Reviews*, 16 (3), pp. 1426-1436. Cited 54 times.
doi: 10.1016/j.rser.2011.11.028
[View at Publisher](#)
-

- 8 Heinimö, J., Junginger, M.
Production and trading of biomass for energy - An overview of the global status
(2009) *Biomass and Bioenergy*, 33 (9), pp. 1310-1320. Cited 136 times.
doi: 10.1016/j.biombioe.2009.05.017
[View at Publisher](#)
-

- 9 Hillring, B.
World trade in forest products and wood fuel
(2006) *Biomass and Bioenergy*, 30 (10), pp. 815-825. Cited 56 times.
doi: 10.1016/j.biombioe.2006.04.002
[View at Publisher](#)
-



10 Kaltschmitt, M., Weber, M.

Markets for solid biofuels within the EU-15

(2006) *Biomass and Bioenergy*, 30 (11), pp. 897-907. Cited 34 times.
doi: 10.1016/j.biombioe.2006.06.009

[View at Publisher](#)

11 Verma, V.K., Bram, S., Delattin, F., Laha, P., Vandendael, I., Hubin, A., De Ruyck, J.

Agro-pellets for domestic heating boilers: Standard laboratory and real life performance

(2012) *Applied Energy*, 90 (1), pp. 17-23. Cited 103 times.
<http://www.elsevier.com/inca/publications/store/4/0/5/8/9/1/index.htm>
doi: 10.1016/j.apenergy.2010.12.079

[View at Publisher](#)

12 Liu, Z., Mi, B., Jiang, Z., Fei, B., Cai, Z., Liu, X.

Improved bulk density of bamboo pellets as biomass for energy production

(2016) *Renewable Energy*, 86, pp. 1-7. Cited 23 times.
<http://www.journals.elsevier.com/renewable-and-sustainable-energy-reviews/>
doi: 10.1016/j.renene.2015.08.011

[View at Publisher](#)

13 Hu, Q., Yang, H., Yao, D., Zhu, D., Wang, X., Shao, J., Chen, H.

The densification of bio-char: Effect of pyrolysis temperature on the qualities of pellets

(2016) *Bioresource Technology*, 200, pp. 521-527. Cited 41 times.
www.elsevier.com/locate/biortech
doi: 10.1016/j.biortech.2015.10.077

[View at Publisher](#)



- 14 Liu, Z., Quek, A., Balasubramanian, R.
Preparation and characterization of fuel pellets from woody biomass, agro-residues and their corresponding hydrochars

(2014) *Applied Energy*, 113, pp. 1315-1322. Cited 103 times.
<http://www.elsevier.com/inca/publications/store/4/0/5/8/9/1/index.htm>
doi: 10.1016/j.apenergy.2013.08.087

View at Publisher
-
- 15 Kaliyan, N., Vance Morey, R.
Factors affecting strength and durability of densified biomass products

(2009) *Biomass and Bioenergy*, 33 (3), pp. 337-359. Cited 590 times.
doi: 10.1016/j.biombioe.2008.08.005

View at Publisher
-
- 16 Kaliyan, N., Morey, R.V.
Natural binders and solid bridge type binding mechanisms in briquettes and pellets made from corn stover and switchgrass

(2010) *Bioresource Technology*, 101 (3), pp. 1082-1090. Cited 223 times.
doi: 10.1016/j.biortech.2009.08.064

View at Publisher
-
- 17 Fasina, O.O.
Physical properties of peanut hull pellets

(2008) *Bioresource Technology*, 99 (5), pp. 1259-1266. Cited 93 times.
doi: 10.1016/j.biortech.2007.02.041

View at Publisher
-



18 Fasina, O.O., Sokhansanj, S.

Storage and handling characteristics of alfalfa pellets

(1996) *Powder Handling and Processing*, 8 (4), pp. 361-365. Cited 32 times.

19 Pis, J.J., Cagigas, A., Simón, P., Lorenzana, J.J.

Effect of aerial oxidation of coking coals on the technological properties of the resulting cokes

(1988) *Fuel Processing Technology*, 20 (C), pp. 307-316. Cited 53 times.

doi: 10.1016/0378-3820(88)90029-X

[View at Publisher](#)

20 García Fernández, R., Pizarro García, C., Gutiérrez Lavín, A., Bueno de las Heras, J.L., Pis, J.J.

Influence of physical properties of solid biomass fuels on the design and cost of storage installations

(2013) *Waste Management*, 33 (5), pp. 1151-1157. Cited 13 times.

doi: 10.1016/j.wasman.2013.01.033

[View at Publisher](#)

21 Ishii, K., Furuichi, T.

Influence of moisture content, particle size and forming temperature on productivity and quality of rice straw pellets

(2014) *Waste Management*, 34 (12), pp. 2621-2626. Cited 35 times.

www.elsevier.com/locate/wasman

doi: 10.1016/j.wasman.2014.08.008

[View at Publisher](#)



- 22 Vassilev, S.V., Baxter, D., Andersen, L.K., Vassileva, C.G.
An overview of the chemical composition of biomass

(2010) *Fuel*, 89 (5), pp. 913-933. Cited 836 times.
doi: 10.1016/j.fuel.2009.10.022


[View at Publisher](#)

- 23 Bdour, M.A., Al-Rabadi, G.J., Al-Ameiri, N.S., Mahadeen, A.Y., Aaludatt, M.H.
Microscopic analysis of extruded and pelleted barley and sorghum grains
(2014) *Jordan J. Biol. Sci.*, 7 (3), pp. 227-231. Cited 4 times.

- 24 López-Fernández, M.P., Burrieza, H.P., Rizzo, A.J., Martínez-Tosar, L.J., Maldonado, S.
Cellular and molecular aspects of quinoa leaf senescence

(2015) *Plant Science*, 238, pp. 178-187. Cited 10 times.
<http://www.journals.elsevier.com/plant-science/>
doi: 10.1016/j.plantsci.2015.06.003

[View at Publisher](#)

 Ponce, S.; Faculty of Industrial Engineering, Universidad de Lima, Lima, Peru; email:spponceal@yahoo.com
© Copyright 2017 Elsevier B.V., All rights reserved.

[< Back to results](#) | [< Previous](#) 63 of 165 [Next >](#)

[^ Top of page](#)

About Scopus

[What is Scopus](#)
[Content coverage](#)
[Scopus blog](#)
[Scopus API](#)
[Privacy matters](#)

Language

[日本語に切り替える](#)
[切换到简体中文](#)
[切换到繁體中文](#)
[Русский язык](#)

Customer Service

[Help](#)
[Contact us](#)



