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连续式秸秆发酵饲料制备机的研制与试验

Development and experiment of continuous producing machine for fermented straws feed

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中文关键词: [农业机械](#), [秸秆](#), [发酵](#), [饲料](#), [发酵饲料制备机](#), [连续梯度发酵](#)

英文关键词: [agricultural machinery](#) [straw](#) [fermentation](#) [feed](#) [machine of producing fermented feed](#) [continuously gradient fermentation](#)

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中文摘要:

为解决目前秸秆饲料转化技术周期长、占用空间大等问题,基于优先分解部分半纤维素的体外发酵工艺,研制了一种适用于农作物秸秆的连续式秸秆发酵饲料制备机,以实现秸秆发酵饲料的快速高效生产。该文分别以玉米、水稻和小麦3种秸秆为原料、以木质纤维素分解菌复合系MC1为发酵剂,进行了周期为3?d的、连续梯度发酵试验,对机器进行性能检测及相应的改进。通过试验发现以玉米秸秆为原料时,机器运行效果最佳。发酵3?d后,玉米秸秆变得松散柔软,半纤维素少量分解,纤维素和木质素基本不分解。该机操作简单、使用方便,发酵过程中能耗低,周期短,可实现秸秆发酵饲料的连续批次生产,生产效率高。

英文摘要:

To solve the problems in the technology of converting straw into animal feed, including long fermenting cycle and taking up large space, and to realize the fast and efficient production of fermented straw feed, the continuous producing machine for fermented straw feed was designed based on the fermentation technology of the prior and partial degradation of the lignocellulose. A series of experiments with a period of 3 days was conducted by a continuous gradient way, using corn stalk, rice stalk and wheat stalk as materials respectively and applying the composite microbial system of MC1 as inoculants, and the producing machine was improved according to its performance during the experiment. The result showed that the producing machine performed best with corn stalk as stock, which became loose and soft after 3 days' fermentation and a small quantity of hemicellulose while few cellulose and lignin was degraded. In conclusion, the continuous producing machine with lower energy consumption was simple to be operated and convenient to be used, and the period of fermentation was short. This machine developed is feasible to convert the corn stalk into animal feed efficiently and continuously.

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