



MENYUSUN ARTIKEL ILMIAH

Membuat Abstrak dan
Pendahuluan



Mahasiswa mampu
menyusun artikel ilmiah
secara terstruktur (Sub-
CPMK 13)



Mahasiswa mampu menulis
abstrak dan pendahuluan
artikel ilmiah (Sub-CPMK
14)

ABSTRAK

- Abstrak menyajikan esensi dari Materi dan Metode, Hasil, dan Kesimpulan.
- Cetak biru untuk Abstrak adalah, “Kami melakukannya. Kami melihat. Kami menyimpulkan,” dan Abstrak harus mencantumkan latar belakang atau alasan penelitian, metode yang digunakan, daftar temuan utama, dan kesimpulan.
- Abstrak harus berupa paragraf tunggal. Itu harus ditulis dalam kalimat lengkap. Jika itu termasuk singkatan teknis, maka itu juga harus mencakup definisi mereka. Abstrak tidak memiliki gambar atau tabel, dan Abstrak jarang mengutip referensi.

ABSTRAK

- Jurnal ilmiah menggunakan dua bentuk berbeda untuk Abstraknya.
- Jurnal tradisional menggunakan Abstrak sederhana—paragraf dengan kurang dari 200 kata.
- Jurnal lain menggunakan Abstrak yang merupakan miniatur dari makalah yang sebenarnya. Abstrak ini biasanya lebih panjang (200-350 kata) dan ditulis dalam subbagian yang sejajar dengan garis besar artikel.

KERANGKA ABSTRAK

- A. One or Two Sentences “BACKGROUND”
- B. Two or Three Sentences “METHODS”
- C. Less Than Ten Sentences “RESULTS”
- D. One Sentence “CONCLUSION”

CONTOH ABSTRAK

Vermicomposting of crop residues and cattle dung with *Eisenia foetida*

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Abstract

We studied vermicomposting with *Eisenia foetida* of mustard residues and sugarcane trash mixed with cattle dung in a 90-day composting experiment. Vermicomposting resulted in significant reduction in C:N ratio and increase in mineral N, after 90 days of composting, over treatments uninoculated with earthworms. Microbial activity, as measured by dehydrogenase assay, increased up to 60 days and declined on further incubation. There was more total N in the compost prepared by earthworm inoculation. However, the differences were not significant. Total P, K and Cu contents did not differ in compost prepared with earthworm inoculation from the uninoculated treatments. © 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Vermicomposting; Earthworms; Crop residues; Cattle dung; Decomposition; Microbial activity; *Eisenia foetida*

ABSTRAK

Ammonia oxidation is the first and rate-limiting step of nitrification, driven by ammonia-oxidizing bacteria (AOB) and ammonia-oxidizing archaea (AOA). Straw and straw biochar retention are the popular ways to utilize the agricultural by-products in China, but their long-term effects on AOB and AOA still remain poorly understood. Based on a 7-year plot experiment, which had 4 fertilization regimes: no fertilizer (CK), regular fertilization (RT), straw retention (SR) and straw biochar retention (SB), the abundance and the composition of AOB and AOA was investigated before both the harvest of rice and wheat season by quantitative PCR and 454 high-throughput pyrosequencing, respectively. (1) Compared to RT, straw and straw biochar increased AOB abundance and diversity significantly only in wheat season ($P < 0.05$), and they both ranked as $SB > SR > RT$. Among fertilized treatments, a significant difference between SR and RT was found in AOB community composition of the winter season (R value = 0.58, P value = 0.02); (2) In contrast, AOA was almost not responsive to organic addition, except the significant enhancement of abundance by biochar in wheat season; (3) After straw and straw biochar addition, soil potential nitrification rates (PNR) was positive correlated to AOB abundance in both rice and wheat season ($P < 0.01$), not to AOA abundance ($P = 0.211$ and 0.068, respectively). This study provides scientific support for the potential of straw utilization to improve nitrification in rice-wheat rotation system with respect to soil ammonia oxidation microorganism.

KEY WORDS

Beberapa jurnal meminta Anda untuk mengikuti Abstrak Anda dengan daftar 3–10 kata atau frasa kunci.

Istilah-istilah ini akan digunakan untuk mengindeks artikel Anda di bawah judul standar dalam database besar. Oleh karena itu, selain memilih kata kunci yang mencirikan fokus khusus makalah Anda, sertakan beberapa istilah yang mengkategorikan makalah Anda secara lebih umum.

Daftar kata kunci Anda menurut abjad pada baris terpisah setelah Abstrak.

CONTOH ABSTRAK

A novel method to assess heat transfer and impact of relevant physicochemical parameters for the scaling up of solid state fermentation systems

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ABSTRACT

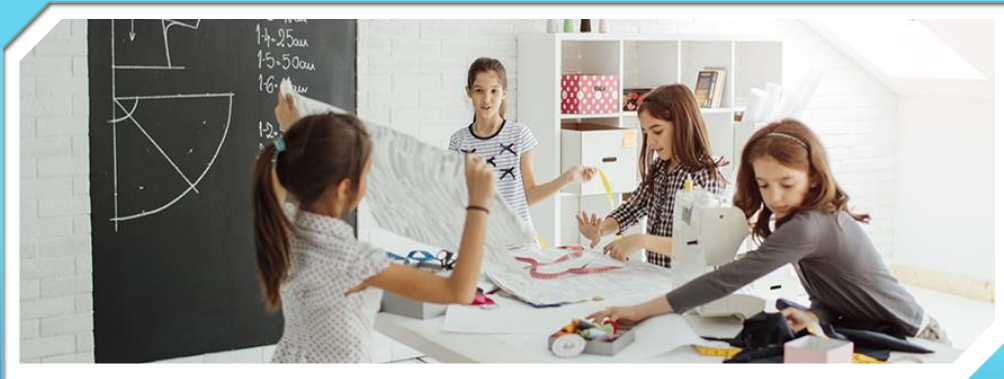
Heat production during fermentation is undesirable. It can affect the growth of biomass, sporulation, products formation and the scaling-up. Physico-chemical properties of substrates influence heat and mass transfer in Solid State Fermentation. Heat is chemically produced into substrates without micro-organism to allow better reproducibility. A 2^{4-1} fractional factorial design is chosen to study the influence of four physicochemical parameters on heat transfer: Granulometry, Bulk Density, Carr Index (compressibility index) and Water Absorption Capacity. Results show that the two main physicochemical parameters which influence heat transfer are Granulometry and Carr Index. High Granulometry and low Carr Index have influence on maximum temperature reached during the test, warm-up speed and cooling speed. These two parameters allow efficient air flow through the substrate bed with large interparticle spaces enhancing exchange surface between air and particles. A substrate with these characteristics facilitates heat transfers in forced-aerated reactors.

KEY WORDS

Co-pyrolysis of corn stover and waste tire: Pyrolysis behavior and kinetic study based on Fraser-Suzuki deconvolution procedure

Keywords:

Co-pyrolysis
Biomass
Waste tire
Kinetics
Fraser-Suzuki deconvolution



PENDAHULUAN

Nur hidayat

PENDAHULUAN

**Beginning
of Discussion:**

"Here is a well
known landmark"



**End of
Discussion:**

"My experiments
should fit here."

Bagian Pendahuluan dimulai dengan mengarahkan pembaca.

Ini menggambarkan bagian dari permasalahan ilmiah yang lengkap, sebuah wilayah yang jelas.

Pendahuluan kemudian mengarahkan pembaca ke sebuah celah dalam permasalahan dan menyampaikan, "Data kami harus muat di sini."

PENDAHULUAN

Bagian Pendahuluan makalah harus mengatur tempat untuk Kesimpulan.

Secara khusus, Pendahuluan harus menggambarkan kesenjangan dalam pengetahuan ilmiah kita saat ini yang dapat diisi oleh Kesimpulan.

Pada saat Anda mulai menulis Pendahuluan, Anda seharusnya sudah mengetahui Kesimpulan, dan oleh karena itu celah spesifik yang akan diisi makalah dapat dijelaskan hanya dengan menyusun ulang pernyataan ringkasan dari Kesimpulan Anda sebagai pertanyaan.

biochar physicochemical properties and soil amendment value. Our underlying hypotheses are that i) both feedstock type and pyrolysis temperature will condition short-term biochar effects on soil health, here represented by soil microbial enumeration and respiration; and ii) this biochar effect on soil health can be explained by their underlying biochar physicochemical properties, driven by feedstock type and pyrolysis temperature.

Our results showed significant differences between the biochar produced from the tested feedstocks and at different pyrolysis temperatures. Our findings indicated that biochars produced from sludge compost are highly mineral (low organic content) and contain elements of concern. Therefore, they should be avoided (or used sparsely) to

PENDAHULUAN

Untuk membuat argumen bahwa saat ini ada celah (masalah) dalam pengetahuan ilmiah kita, mulailah Pendahuluan dengan pernyataan ilmiah yang diterima secara luas.

Kemudian pimpin pembaca selangkah demi selangkah dari yang diketahui ke yang tidak diketahui, celah yang akan diisi oleh Kesimpulan Anda.

Saat memilih di mana untuk memulai, pikirkan tentang pembaca jurnal yang Anda tulis. Pilih titik awal yang seharusnya sudah diketahui atau diterima sebagian besar pembacanya.

Beginning of Discussion:

"Here is a well known landmark"



End of Discussion:

"My experiments should fit here."

Customized biochar for soil applications in arid land: Effect of feedstock type and pyrolysis temperature on soil microbial enumeration and respiration

1. Introduction

Significant improvements in agricultural management are required to achieve more productive and sustainable agricultural systems and to develop fragile rural economies. The adoption of effective agricultural management practices with long-term impacts is essential to maintaining and improving the sustainability of agroecosystems [1]. Many soil

properties (such as ion exchange, soil organic matter, and water holding capacity, among others) can be contrived to increase the sustainability of agroecosystems, soil quality, and soil fertility and enhance water use efficiency (WUE) [2]. Biochar is one of the amendments that can improve many of these soil properties [3] and enhance agricultural productivity and sustainability [4]. Biochar soil amendments increase crop yields primarily by improving fertilizer use efficiency, water

PENDAHULUAN

Dari titik dasar yang kuat ini, bawa pembaca ke area spesifik dari masalah penelitian dengan mengikuti rantai pendek pengamatan yang dilaporkan sebelumnya.

Arahkan pembaca langsung ke tempat di mana Kesimpulan Anda seharusnya, dan ajukan pertanyaan yang dijawab oleh Kesimpulan Anda.

Jelaskan bahwa jawabannya saat ini tidak diketahui, dan tunjukkan kepada pembaca Anda tepi lubang ini dalam pengetahuan kita dengan mengutip informasi terdekat yang tersedia dalam literatur ilmiah

PENDAHULUAN

Dalam Pendahuluan, berikan referensi yang cukup sehingga pembaca dapat pergi ke literatur ilmiah dan melihat sendiri pengamatan tertentu yang saat ini mengelilingi lubang yang Anda usulkan untuk diisi.

Akhiri Pendahuluan dengan menyatakan secara singkat bagaimana Anda berencana untuk menjawab masalah tersebut.

Rencana terdiri dari perlakuan yang dirinci dalam Bahan dan Metode. Oleh karena itu, beberapa kalimat terakhir dari Pendahuluan harus merangkum perlakuan utama yang memberi Anda data yang menjadi dasar Kesimpulan.

PENDAHULUAN

Rencana perlakuan harus merupakan varian dari pernyataan, "Di sini kami melaporkan pengamatan yang dapat dilihat setelah melakukan X," di mana 'X' adalah ringkasan perlakuan utama dalam Bahan dan Metode Anda.

In this review, we describe several proposed probiotic mechanisms of this yeast and update readers on recent clinical and preclinical studies. Finally, we address a new frontier in the use of probiotics: the potential for the use of engineered yeast as live biotherapeutics.

- A. Background
 - 1. Currently-Accepted General Statements
 - 2. Available Supporting Data
- B. Gap
- C. Your Plan of Attack

A. Background

1. Currently-Accepted General Statements

1. Introduction

Solid-state fermentation (SSF) can be briefly described as microbial fermentation which takes place in the absence or near absence of free water. This is a bioconversion process carried out on solid state substrate with moisture content about 30–80% [1–3]. It is being successfully employed to produce food enzymes such as lipases [4,5], xylanases [6], endoglucanases [6], amylases [7] or proteases [7, 8], protein isolation

A novel method to assess heat transfer and impact of relevant physicochemical parameters for the scaling up of solid state fermentation systems

2. Available Supporting Data

The microbial growth under aerobic conditions induces considerable heat production that causes a fast increase of temperature [15,16]. A large quantity of metabolic heat is produced during SSF, up to 3200 kcal.kg⁻¹ dry matter (DM) in composting systems [17] and a temperature gradient of 3 °C.cm⁻¹ in tempeh fermentation [18,19]. Heat generation is directly related to the metabolic activities of the microorganisms, particularly respiration during growth, which is related to oxygen consumption and CO₂ formation. In some case, temperature inside the bed can reach 70 °C [20]. Thus, the nutritional composition of the substrate is important in heat production.

C. Gap

In SSF processes, evaporation makes very significant contributions to heat removal [28]. So Water Absorption Capacity (WAC) is considered important and must be taken into account. Kumar et al. [30] use *Aspergillus niger* to individually ferment Wheat Bran (WB), enriched by molasses or sucrose, and observe agglomeration in WB beds at moisture content (MC) as low as 65%. Poorna and Prema [31] study the production of endoxylanase from *Bacillus pumilus* cultivated in WB and found best result for 71.4% MC. According to the authors, low MC re-

C. The Plan of Attack

The main objective of this study is to highlight the importance of the physicochemical characterization of substrates before starting a fermentation in solid medium and its impact on heat transfer during SSF process under forced aeration. Chemical heat is produced by adding calcium oxide in the moistened substrate for better reproducibility. An experimental design is applied to choose one or more methods of characterization the most relevant in heat transfer with forced-aeration reactors.