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Methods and systems for production of organically derived ammonia/ammonium

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(54) **METHODS AND SYSTEMS FOR PRODUCTION OF ORGANICALLY DERIVED AMMONIA/AMMONIUM**

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(58) **Field of Classification Search**
None
See application file for complete search history.

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(57) **ABSTRACT**

Disclosed are methods for forming ammonia and ammonium that can be utilized in certifiably organic farming productions according to most if not all known certification standards. Also disclosed are bioreactors that can be utilized in carrying out disclosed methods. Methods and systems utilize obligate anaerobic bacteria to breakdown organic protein substrates, i.e., compounds containing bound nitrogen, to provide nitrogen in an unbound plant available form, and particularly, ammonia and/or ammonium. Obligate anaerobic bacteria include high ammonia producing bacteria such as *Peptostreptococcus anaerobius, Clostridium sticklandii*, and *Clostridium aminophilum.*

12 Claims, 6 Drawing Sheets