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NutriBlock, an innovative, specialised Blockchain solution for food safety traceability in the agri-food & nutraceutical products industries

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ABSTRACT

A blockchain system for determining provenance of a food product is provided. The system employs both private ledgers and a public ledger to record every aspect of a food product from origin through to the consumer. A consumer can access the system to query the provenance of a product.

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Editorial Note

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There are three pages of description only

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Patents Act 1990

NutriBlock, an innovative, specialised Blockchain solution for food safety traceability in the agri-food & nutraceutical products industries

Patent Description – The patent is described in the following statements

The food safety area of food manufacturing is becoming more stringent with consumers demanding natural and safe foods to consume.

The standard auditing method for food safety relies on a paper-based auditing system with some IT interface such as a tablet/ computer with software for recording audit findings and generating reports. Auditing can be completed for local council food laws based on the Food Act 1984, or for internationally recognised compliance standards such as ISO22000, Hazard and Critical Control Point Analysis (HACCP), BRC Global Food Standard for food safety, SQF2000, IFS etc.

The actual information is held by multiple corporations i.e. farming corporation, food manufacturer & their suppliers (100+ in some instances), distributor, supermarket.

The information can be adulterated, often leading to consumer mis-information. Moreover, in the event of a food pathogen outbreak, the time to respond to a possible outbreak would be reduced from days to just minutes pin pointing the actual farm, or supplier where the possible contaminant could have been introduced.

Moreover, consumers are demanding faster, more cost-effective methods of evaluation and auditing and to have real time data available for dynamic evaluation of their company's operations. The use of blockchain technology is one example of this, providing real time data to a client.

Previous art does not include any IP Australia Patents, yet includes USPTO Patent numbers;

9,881,366 & 9,159,126 [System and method for analysing and processing food product],
8,505,488, 8,256,381, 7,810,451, 7,705,735, 7,681,527 [Method and system for tracking and managing animals and/or food products]. This previous art explored involves the analysis and also tracking of food and also managing livestock assets, but not auditing of food safety per se. An online system for farm, food manufacturing auditing has been registered in Australia (2018100793).

Presently, if consumers wanted to check if their product conforms to Australian or International standards they would need to contact the company and they would be at their own discretion to divulge information. If a compliant was made, it would be referred to the

council environmental health and safety officer for investigation, but food companies could still mask or hide impropriety.

Our proposed Blockchain system uses a combination of public and private ledger system built using nodes created by smart contracts that would register every input both raw materials, human in the form of employees, consultants into an online system that could track for consumers when a product was produced, and which raw materials were used and where they originated from.

Often corporations used third party manufacturers and their practices and inputs are often even unknown to the product/ brand company.

The prospective client logs into an online Blockchain portal and is guided through the checklist to identify their food product from a barcode scan, or product plus Julian code/ date & time stamp

The consumer can report a real-time non-conformance to the Blockchain and the node(s) would be identified, participants in the smart contract alerted of the non-conformance and at the same time remain completely anonymous to the public whilst they investigate the allegation.

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There are two pages of claims only

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Patent Claim(s)

NutriBlock, an innovative, specialised Blockchain solution for food safety traceability in the agri-food & nutraceutical products industries

1. The food safety area of food manufacturing is becoming more stringent with consumers demanding natural and safe foods to consume.
2. The standard traceability method for food safety relies on a paper-based auditing system with some IT interface such as a tablet/ computer with software for recording audit findings and generating reports. Auditing can be completed for local council food laws based on the Food Act 1984, or for internationally recognised compliance standards such as ISO22000, Hazard and Critical Control Point Analysis (HACCP), BRC Global Food Standard for food safety, SQF2000, IFS etc.
3. The actual information is held by multiple corporations i.e. farming corporation, food manufacturer & their suppliers (100+ in some instances), distributor, supermarket.
4. Our Blockchain system replaces the paper based and internal IT systems with a Blockchain solution that combines both private ledgers and a public ledger to make smart contracts for every aspect of input into the farming, food transport, food manufacturing & packaging, food distribution and wholesale/ retail sale of the food either as a separate retail product or as a consummated product served in a restaurant.
5. Each input or transaction activity makes a node that would facilitate traceability in the event of a food recall.
6. Consumers can alert if there is a contaminant and alert all smart contract participants to the issue to instantly where the non-conformance has arisen.
7. The consumer would log into the NutriBlock App or webpage log in and could see where their product comes from geographically, dates and times of harvest and food manufacturing and time on the shelf.
8. They could also report any non-conformance via this system as well.