



N2N "FRESH – EXTENDER Products

Products for extending the freshness and shelf-life of crops, produce, flowers, and food.



N2N™ Fresh-Extender Product

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Our innovative N2N™ Fresh-Extender technology uses advanced natural formulations to significantly prolong freshness without artificial preservatives. These environmentally-friendly solutions work by controlling respiration rates, inhibiting ethylene production, and preventing microbial growth—addressing the key factors that cause deterioration.



N2N™ Fresh-Extender products are available in various specialized formulations including sprays, coatings, sachets and atmospheric solutions to meet the specific needs of different agricultural sectors and food industries.

N2N™ Fresh-Extender products represents our commitment to sustainable food systems and practical solutions to global food security challenges. Our research team continuously works to develop new applications and improve existing formulations to meet evolving market needs.

N2N™ Fresh-Extender Benefits

Extended Shelf Life

By extending shelf-life by up to 300%, our products deliver substantial benefits throughout the supply chain:



Extender in action, one coffee leaf coated, one not.
(Wrapped in same wet paper-towel and stored for 3 weeks)

Supply Chain Advantages

- Reduced food waste and spoilage during transportation and storage
- Decreased environmental impact through more efficient resource utilization
- Improved product quality and consumer satisfaction
- Enhanced profitability for growers, distributors, and retailers
- Preservation of nutritional value and flavor profiles
- Reduced need for refrigeration and energy consumption

Proven Applications

Our technology has been successfully implemented across diverse applications from post-harvest crop treatment to retail display enhancement, creating value at every stage of the food supply chain.

Project Summary

N2N Fresh Group owns proprietary technology for "Fresh-Extender" products that significantly extend shelf-life of produce, crops, flowers and foods through a protective antimicrobial coating system.

N2N™ Extender Products

- N2N Fresh Group, (NFG) owns all license(s) / Rights to globally manufacture and market the N2N Fresh-Extender products / systems.
- The "Fresh-Extender" Products extend the shelf-life and keep fresh longer, products such as fruit, vegetables, produce, crops, flowers and raw foods etc.
- The N2N "Fresh-Extender" Products are based on of N2N's specially developed and exclusively owned technologies and associated intellectual property, (IP), which encapsulate these items, (via a fine spray coating) making it impossible for the colonization of any microbes, (such as molds, mildews, bacteria, viruses, black spots, etc.), from forming on the applied surfaces.





N2N Fresh Group, Company Focus

N2N™ Flagship Technology Products

- N2N Fresh Group utilized the N2N base, disruptive, technologies to produce the N2N "Extender" Products including:
- Products that are eco-friendly and work in one with nature to reduce rot and spoilage in crops, produce, flowers, etc.
- Products that keep produce, crops, flowers, etc. fresh for extended time periods while decreasing, (and in many cases eliminating), wastage/spoilage, currently incurred by both growers and resellers alike.



N2N™ Extender Mission

N2N™ "Extender" Products will go a long way to reverse the following:

1.3B

Tons Wasted

Roughly one-third of the food produced in the world for human consumption every year - approximately 1.3 billion tons - gets lost or wasted.

40%

Highest Wastage

Fruits and vegetables, plus roots and tubers have the highest wastage rates of any food.

40%+

Loss Levels

In developing countries, 40 percent of losses occur at post-harvest and processing level while in industrialized countries more than 40 percent of losses happen at retail and consumer levels.





870M

People Fed

If just 25% of the food currently lost or wasted globally could be saved, it would be enough to feed 870 million people globally.

N2N™ Fresh-Extender Products Benefits

Some of the many advantages achieved using N2N™ "Fresh-Extender" Products are:

-  **Financial Impact**
Crop spoilage, either from storage, transportation or more commonly, rotting caused by mold and other bacteria, a major issue for growers and resellers alike. This loss equates to a financial loss that runs into billions of US dollars annually.
-  **Environmental Impact**
Decaying crops/food is responsible for over 7% of the carbon that is released into the atmosphere globally on an annual basis.
-  **Retail Impact**
Large resellers of produce, flowers, etc. claim that up to 21% of their purchases from growers/suppliers do not make it to end-users because of these issues.
-  **N2N Solution**
N2N Fresh Group believes that it can significantly reduce/eliminate these issues globally with the use of N2N™ "Fresh-Extender" Products.



Crops

N2N™ "Fresh-Extender" Product has shown remarkable results in preserving crops and extending shelf life.



Application Timing

Testing has shown that to get the best results, in terms of shelf-life extension and freshness, N2N™ "Fresh-Extender" Product should be applied to the produce just prior to harvest and then again before being packaged for transport.



Exceeding Expectations

Numerous growers have achieved results beyond what they expected or deemed necessary by applying Fresh-Extender Products to harvested produce.



Proven Results

In a controlled test, two coffee leaves from the same tree (one treated, one untreated) were stored in identical conditions for two weeks. The untreated leaf lost all color and reached advanced decomposition, while the treated leaf remained fresh as the day it was picked. Even where the leaf wasn't directly treated, the product prevented rot from spreading to the rest of the leaf.

Produce

Bacterial and fungal micro-organisms pose a significant threat to harvested produce, but N2N™ Fresh-Extender provides effective protection.



Immediate Attack

Bacterial and fungal micro-organisms, responsible for post harvest rot, attack all produce the minute it is harvested.



Cross-Contamination

If only a small part of the produce has a colonization of rot, bacteria or similar nasty form on it, this will be enough to spread and infect all produce packaged around it.



Complete Protection

Fresh--Extender not only stops the initial infestation of rot/bacteria, etc. but will protect all other surrounding produce from being affected, should this occur.

Flowers

The cut flower market is a multi billion-dollar market annually.

Industry insiders claim that up to 30% of all cut flowers fail to make it to the end-user due to mold, black spots, (a form of mold), mildew and other bacteria that blight the flowers after cutting.

Once a flower is cut from a plant, mold/bacteria attack both the cut surface, which can spread internal damage, and the flower surface itself. Extensive testing using Fresh-Extender Products has proven that:

1. The life of a treated flower after being cut is approximately twice that of an untreated one.
2. Treated flowers reduce the risk of loss in transit to almost zero.
3. Growers/resellers gain an increase in profits due to the extended life cycle of the treated flower by increasing both the transportation and reseller shelf-life times.



Food

Fresh-Extender Applications for Food Products



- Fresh-Extended Trials have been undertaken on a variety of foods, both refrigerated and unrefrigerated.
- This has been done by applying Fresh-Extender products to the polystyrene trays, the absorbent pads under the food product and, in some cases, the clear atmospheric permeable plastic film.
- Initial results have been beyond our expectations, although further testing and development needs to be undertaken.
- Meat/Fish packaging products treated with Fresh-Extender lasted a full day unrefrigerated before any spoilage occurred.
- Meat/Fish products treated with Fresh-Extender that was then refrigerated showed increased shelf-life of up to a week beyond traditional expectations and in some cases longer.

Summary

Global Potential for N2N Fresh-Extender Products

Global Market

Global Markets for Fresh-Extender Products are virtually untapped and enormous covering crops, produce, flowers and food.



Environmental Benefits

Fresh-Extender Products benefit not only growers, producers and resellers alike but also the general population, through the reduction of undesirable gases being released into the atmosphere, from rotting food, which contributes to global warming.

Intellectual Property

Our proven, in-house, Intellectual Property/Technologies utilized in the production of Fresh-Extender Products make these products not only unique but almost immune from competition.

Contact N2N

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