Fresh Leafy Greens
New Walmart Food Traceability Initiative
Questions and Answers

At Walmart and Sam's Club, our commitment to our customers is unparalleled and we are always working to provide safe and quality foods in our stores and Clubs. As part of our commitment to continuous improvement, we go further than many U.S. retailers do in requiring harmonized, leading-edge food safety standards be adopted throughout the entire food production chain.

In light of recent leafy green outbreaks and recent developments in new and emerging technologies, we are re-emphasizing with our suppliers some of our already existing food safety requirements as well as an additional new layer of protection by requiring all leafy green suppliers to implement end-to-end traceability using blockchain technology.

Leafy greens remain an important food commodity to our customers and this new traceability requirement is consistent with our commitment to continuous improvement and goal to provide safe and affordable food, so people can live better.

Food Safety Related Questions

- **Why is Walmart launching this initiative now?**
- **Why is Walmart starting with leafy greens?**
- **Will Walmart make this a requirement for other food commodities as well?**
- **Will this be required of leafy green suppliers in all the markets that you operate?**
- **What leafy green commodities are in the scope of the requirement?**
- **Will this be required of products that contain leafy greens as well as other ingredients?**
- **What will it cost to comply with the requirements?**
- **What business process changes will be required for the supplier?**
- **Does blockchain replace any existing requirements such as UPC coding or the Produce Traceability Initiative (PTI)?**
- **Will other retailers use the same blockchain ecosystem?**
- **Is it sustainable for small and medium sized companies?**
- **What kind of traceability data do I need to capture and send to the blockchain?**
- **Can I use another system or technology for food traceability purposes?**
- **What kind data security is in place to ensure my competitors do not see my commercial confidential information?**
- **How do I get started?**
- **Whom do we contact if we have questions regarding Walmart's new traceability initiative?**

Technology Related Questions

- **What is blockchain?**
- **Why is Walmart requiring the use of the IBM Food Trust blockchain solution?**
- **How do I obtain a GS1 Global Trade Item Number (GTIN) or Global Location Number (GLN)?**
- **Whom do we contact if we have software issues including error codes when sending data to the blockchain?**
- **What software investments do I have to make to send data to the blockchain?**
- **What hardware investments do I have to make to send data to the blockchain?**

Fresh Leafy Greens
New Walmart Food Traceability Initiative
Questions and Answers

- **Will the blockchain solution work with our existing software systems such as ERP, accounting, inventory management?**
- **Where can I find user instructions for how to send data to the blockchain?**
- **Whom do we contact if we have questions regarding the technology solution?**

Food Safety Related Questions and Answers

Question: Why is Walmart launching this initiative now?

Answer: In light of this year's romaine outbreak, we believe there is a strong public health and business-case for better food traceability measures. Walmart along with 10 of our foundational partners and IBM have been exploring the use of blockchain technology to enable end-to-end traceability for the past two years. After several iterations of testing, learning, and scaling, we believe the technology-solution is ready and capable to incorporate the needs of small, medium and large size enterprises in a way that creates shared value along the entire farm to store continuum.
<Back to Top>

Question: Why is Walmart starting with leafy greens?

Answer: Leafy greens are an important and healthy part of a person's diet; unfortunately, over the past decade, there have been multiple high profile recalls and outbreaks associated with these types of products. By quickly tracing leafy greens back to source during an outbreak, impacts to human health can be minimized, health officials can conduct rapid and more thorough root cause analysis to inform future prevention efforts, and the implication and associated-losses of unaffected products that are inaccurately linked to an outbreak can be avoided.
<Back to Top>

Question: Will Walmart make this a requirement for other food commodities as well?

Answer: While we are starting with leafy greens, we anticipate eventually scaling to other food commodities in a prioritized, phased manner.
<Back to Top>

Question: Will this be required of leafy green suppliers in all the markets that you operate?

Answer: These new requirements are for all US leafy green suppliers. As our commitment to continuous improvement in all markets that we operate in, similar initiatives may be rolled out in other markets that we operate.
<Back to Top>

Fresh Leafy Greens
New Walmart Food Traceability Initiative
Questions and Answers

Question: What leafy green commodities are in the scope of the requirement?

Answer: We are using the definition of leafy greens as established by the Leafy Greens Marketing Agreement (LGMA). Therefore, the following commodities are including in leafy greens (conventional and organic):

- Arugula
- Baby Leaf Lettuce
- Butter Lettuce
- Cabbage
- Chard
- Endive
- Escarole
- Green Leaf Lettuce
- Iceberg Lettuce
- Kale
- Red Leaf Lettuce
- Romaine Lettuce
- Spinach
- Spring Mix

<Back to Top>

Question: Will this be required of products that contain leafy greens as well as other ingredients?

Answer: Yes, if the predominant ingredient of the product is fresh leafy greens, we are only requiring traceability of the fresh leafy greens and not the other ingredients (such as spices, dressings etc.) at this time.
<Back to Top>

Question: What will it cost to comply with the requirements?

Answer: Walmart is committed to safe and affordable food. On balance, we believe this new enhanced food traceability measure will create food system efficiencies – not add cost to the food system. The level of investment may vary depending on the degree of digitization of data that exists within your company today. IBM has developed several low cost onboarding and subscription models to cater to the needs of small and midsized enterprises. Accordingly, we anticipate minimal on-going maintenance costs once the initial onboarding is completed.
<Back to Top>

Question: What business process changes will be required for the supplier?

Answer: Depending on your role in the supply chain, if you are not already complying with the Produce Traceability Initiative requirements, you will be required to do so. This includes sending Advance Shipment Notices (ASNs) to Walmart, and affixing a PTI-compliant label on every case of leafy greens.
<Back to Top>

Fresh Leafy Greens
New Walmart Food Traceability Initiative
Questions and Answers

Question: Does blockchain replace any existing requirements such as UPC coding or the Produce Traceability Initiative (PTI)?

Answer: No. In an effort to minimize cost and effort, Walmart has collaborated with IBM to build the blockchain platform utilizing existing traceability requirements such as those by the Produce Traceability Initiative. While some suppliers are already in compliance with PTI, by joining this solution, we believe suppliers will extract better insights and value and reap greater benefits of complying with PTI.
<Back to Top>

Question: Will other retailers use the same blockchain ecosystem?

Answer: Over the past year, Walmart has been working with two other retailers as foundational partners on this blockchain initiative. Over time, we anticipate more retailers and foodservice organizations will be utilizing blockchain to enable traceability and transparency in their supply chains.
<Back to Top>

Question: Is it sustainable for small and medium sized companies?

Answer: Yes, Walmart has tested this model with small and medium sized companies and we believe IBM has developed a user-friendly solution and low cost subscription model that caters to the needs of small and medium enterprises.
<Back to Top>

Question: What kind of traceability data do I need to capture and send to the blockchain?

Answer: The following is a non-comprehensive list of key data elements to be captured: product ID (GTIN-14), lot/batch codes, purchase orders and date/time codes (of harvesting, processing, shipping, and receiving).
<Back to Top>

Question: What if I want to use another system or technology for food traceability purposes?

Answer: You can use any technology for your internal purpose of enabling food traceability as long as that technology is capable of sending data to the IBM Food Trust blockchain using GS1 standard communication protocols such as EPCIS.
<Back to Top>

Question: What kind data security is in place to ensure my competitors do not see my commercial confidential information?

Answer: The IBM Food Trust blockchain solution uses Advanced Encryption Standard (AES-256) for asset encryption and provides access controls to give you the flexibility to decide who gets to see what data when and for what purpose.
<Back to Top>

Fresh Leafy Greens
New Walmart Food Traceability Initiative
Questions and Answers

Question: How do I get started?

Answer: To get started, you can follow instructions found at https://www.ibm.com/blockchain/solutions/food-trust/get-started and select the on-boarding option and participation module that is right for you.
<Back to Top>

Question: Who do we contact if we have questions regarding Walmart's new traceability initiative?

Answer: Please direct all questions to Tejas Bhatt, Senior Director of Food Safety Innovations, at tejas.bhatt@walmart.com
<Back to Top>

Technology Related Questions and Answers

Question: What is blockchain?

Answer: A blockchain platform is a digital distributed immutable ledger of transactions that enables a single version of the truth across an ecosystem and helps enable trust.
<Back to Top>

Question: Why is Walmart requiring the use of the IBM Food Trust blockchain solution?

Answer: For the past two years, Walmart has collaborated with IBM to develop a scalable, low-cost solution to enabling end-to-end traceability using blockchain technology. IBM is a recognized leader in blockchain and has demonstrated the robustness and effectiveness of their solution. Walmart and IBM have committed to interoperability with other solutions that uses the same global standards such as Hyperledger and GS1.

At the same time, you can use any technology for internal traceability as long as that technology is capable of sending data to the IBM Food Trust blockchain using standard APIs or EPCIS events.
<Back to Top>

Question: How do I obtain a GS1 Global Trade Item Number (GTIN) or Global Location Number (GLN)?

Answer: Please visit GS1 to learn more about these global standards and how to obtain them for your business: https://www.gs1.org/standards/id-keys/gtin
<Back to Top>

Question: Who do we contact if we have software issues including error codes when sending data to the blockchain?

Answer: This would be included as a part of your onboarding agreement with IBM. Please direct all technology related questions to IBM at https://www.ibm.com/blockchain/solutions/food-trust/get-started
<Back to Top>

Fresh Leafy Greens
New Walmart Food Traceability Initiative
Questions and Answers

Question: What software investments do I have to make to send data to the blockchain?

Answer: Your company may need to develop means to extract data from your internal systems in order to send it to the blockchain in the standard EPCIS protocol. Depending on the level of digitization of data that exists at your company, you may need to invest in sending Advance Shipment Notices (ASNs) using the standard EDI protocol.

<Back to Top>

Question: What hardware investments do I have to make to send data to the blockchain?

Answer: Depending on the level of digitization of data that exists at your company, you may need to invest in printing and scanning capabilities of GS1-128 compliant bar codes to enable lot level traceability by the case or bin.

<Back to Top>

Question: Will the blockchain solution work with our existing software systems such as ERP, accounting, inventory management?

Answer: Yes, you can use whichever technology systems you want to enable internal traceability as long as it is capable of exporting and sending data to the IBM Food Trust blockchain solution using standard APIs and EPCIS events.

<Back to Top>

Question: Where can I find user instructions for how to send data to the blockchain?

Answer: Please view the user instructions at https://github.ibm.com/FoodSafety/developer-zone/wiki
<Back to Top>

Question: Whom do we contact if we have questions regarding the technology solution?

Answer: Please see https://www.ibm.com/blockchain/solutions/food-trust/get-started for more information on FAQs and contact options
<Back to Top>