

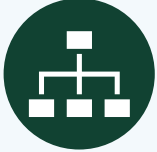


**Euro
Plant
Tray**

Dirk Bansenmer – Euro Plant Tray

Reusable Plant Trays with RFID Coding

Agenda



The Challenge

Network of the European Green Sector



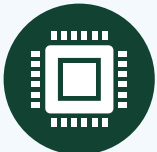
PPWR

The sector is prepared



The Product

Reusable Plant Trays in Serial Production



RFID

Make the Plant Trays smart of the logistic future



Euro Plant Tray

... finds it's way into the praxis

The Challenge

- Estimated use of one-way plastic trays p.a. with limited/no recycle systems in place for **re-use**
 - 150 Mio. in Germany
 - **500-700 Mio. in Europe**
- Wide variety of existing trays make automation of industry processes nearly impossible
- Existing reusable tray solutions have not achieved market penetration (supplier-based solutions)



Initiating the Project in 2021

- January

Symposium of the German Environmental Aid Association (DUH):
“Everything but green – the plastic problem in the plant trade”

- March

Start of the **Flowertray project:**

- Neutral project management by the Reusable Initiative Foundation („SIM“)
- Approximately 80 European companies involved in plant production, plant trade, end sales in specialist stores and retail, as well as their suppliers.
- Survey of approximately 350 companies to determine requirements, necessities and framework conditions for a European standard solution.

- Autumn

Establishing the framework conditions for a reusable solution in a fact and decision sheet



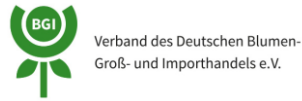
Reusable plant trays of an industry initiative are the solution

- Reusable saves resources and reduces waste
- Reusable packaging reduces CO2 emissions thanks to shorter transport routes back to the producer
- Depending on the key figures of the individual supply chains, reusable packaging of the EPT is more economical than disposable packaging from as few as 4 cycles per year
- Cradle2Cradle material use with 100% recycling of defective units
- An industry-owned organisation is able to overcome the barriers of such an infrastructure task in an industry with very interwoven European supply chains.



Study by the Fraunhofer Institute for Material Flow and Logistics/Dortmund in collaboration with the Fraunhofer Institute for Environmental, Safety and Energy Technology/Oberhausen

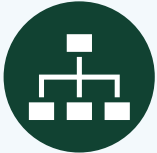
The Euro Plant Tray members drive the 2022 founded cooperation



2 new members
end of 2025 →



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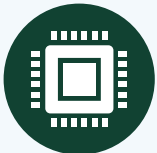
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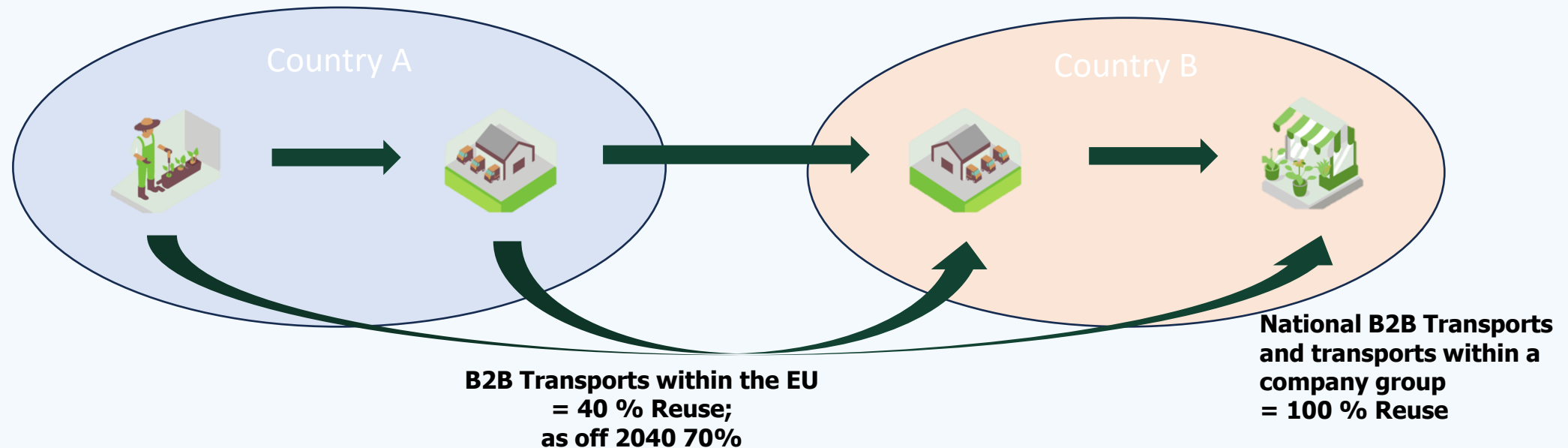
Euro Plant Tray

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Political framework makes it now additionally necessary

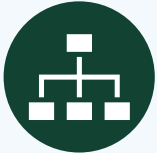
On 24 April 2024, the EU Parliament passed the Packaging & Packing Waste Regulation (PPWR) by a large majority. Following linguistic adjustments without any changes to the content, it was reconfirmed in November 2024. **The deadline for implementation across Europe is 1st January 2030!**

Along the supply chain between countries, upstream and downstream processes make 100% reusable the norm. Registrations on the use of packaging will be done centrally.



NB: Currently cardboard packaging is still exempt

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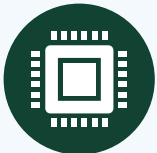
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Serial Production started in 2024

EPT 400



10 -12 p.



10,5 - 13 cm



10 p.



12 cm



The EPT 400 is in production since August 2024

EPT 200



8 -12 p.



9 - 10,5 cm



6 -8 p.



10,5 - 13 cm



The EPT 200 is in production since September 2025

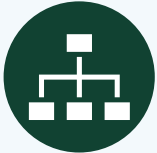


Additional products / sizes are in development to be launched next year.

Serial Production in the supplier network from beginning with RFID Inmould Label



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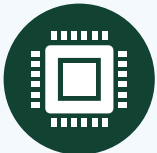
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RFID tags were integrated right from the start

Steps to decide for RFID

1. Technical framework

- EECC
- Container Centralen / Lyngsoe

2. Establishing technical specifications

3. Talks with potential suppliers

4. Coding

- **GS1 GTIN (1D)**
- **Data Matrix (2D)**
- **RFID (Auto-ID)**
- **Fustcode (RFH)**



*Inmould production
ensures long-term
usability!*



Option top speed up processes and automatisisation

Data capture with Auto-ID / RFID extremely performant and securely complete compared to barcode scanning.

Manuel
scanning
"Barcode"



HANDLING 132
TRAYS
119 SEC
Per pallet



Automated
scanning
"RFID"

HANDLING 132
TRAYS
2 SEC
Per pallet



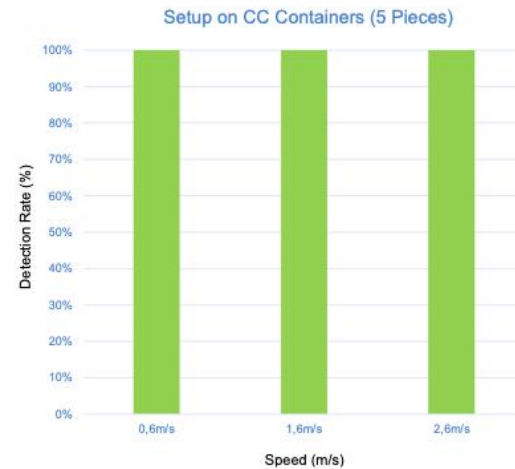
Frist test showed the feasibility

An initial validation of the functionality and operability of RFID on the EPT trays with the EECC - European EPC Competence Center was successful: **The RFID tags are excellently detectable in the stack and in motion on CC's!**

DYNAMIC READ TESTS



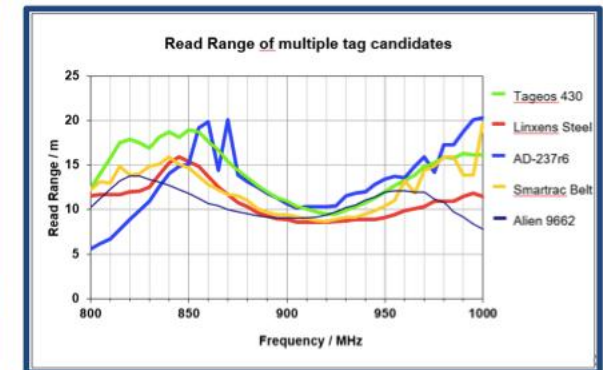
11.08.23



STATIC READ TESTS



11.08.23



3

RFID works when traditional ID systems strumble

RFID ensures excellent readability even if the optical identification (barcode and QR code) is soiled or covered by plants.



MULTIPLE READER POSSIBILITIES



ADVANTAGE OF RFID OVER BARCODE

High error rate with barcodes



Reliable detection with RFID

Through use, the containers will become dirty over time. This leads to the fact that they can no longer be detected with a barcode reader. RFID does not have this problem and allows constant detection despite heavy soiling of the container.



Handheld Solution



Gate Solution

5

14.08.23

6

Group Capturing in Supply Chains

- RFID antenna in the label is optimised for tightly stacked reusable units
- Bulk recording of up to 600 trays in a stack in one pass
- Automatic recording in stacks in goods receipt and goods issue reduces time expenditure enormously
- Real-time recording and management of all racks and trays reduces search and logistics costs.
- Process runs are optimally and seamlessly documented and booked in the system



Mobile Capturing in Supply Chains

- RFID antenna in label is optimised for tightly stacked reusable units
- Mobile bulk recording during the process
- Real-time recording and management of all racks and trays reduces search and logistics costs.
- Process runs are optimally and seamlessly documented and recorded in the system.

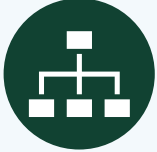


Prozess Benefits

- Recording when handed over to service providers
- Reverse booking in the deposit system
- Recording during cleaning cycle
- Checking for OK and age/cycles
- Removal of defective parts
- Booking cleaned units into stock
- Stock data available in real time
- Real-time removal from stock and derecognition
- Transport to assembler
- Posting of contents and data per tray by assembly service provider Plants
- Transfer of assembled units to retail
- Automatic posting and derecognition in retail



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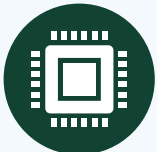
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Positive Feedback

- Simplified handling thanks to greater stability
- Less damage to goods due to greater stability
- Uniform appearance at the POH
- Positive feedback from end customers for the sustainable commitment
- Fewer product write-offs due to preservation of freshness with irrigation
- Hardly any soiling of the trays in circulation

But:

- Challenge at self-scanner checkouts when serving to the end customer
- Manual counting is time-consuming and error-prone
- Return logistics and employee communication must to be organised



EPT Cost indication

Large volumes and economies of scale across the industry result in attractive terms within the system, while annual billing avoids initial investment costs for users.

Costs EPT 400 Tray	EUR
Annual rent including pool operator fee *	0,70
Number of circulations per annum	4
Total expenditure per use	0,175

One way tray size 400	EUR
Cost per tray **	0,35
Number of circulations per annum	1
Total expenditure per use	0,35

This leaves EUR 0.175 per cycle to cover individual supply chain costs for storage, transport and administration.

Leases are offered for 1, 3, 5 and 10 years. Anyone can lease: EPT members and non-members, retail chains, wholesalers, logistics service providers, producers.

* Based on EPT Member Price and PrePayment 3 years

** Depending on the location, costs for disposable trays may vary due to the disposable plastic tax.

Euro Plant Tray Achievements

Februar 2026:
BHB-BranchenAward 2026
Categorie „Best of Process“



Bundesministerium
für Ernährung
und Landwirtschaft



Deutsche Umwelthilfe



inotec group wins the Excellence
in Reusable Packaging Award
2025

/// Wed. 03.09.2025

inotec group wins prestigious industry award

- Development of 4 market-ready models with corresponding sales system within 2 years
- Cost savings possible from just 4 cycles p.a.
- International cooperation along the entire supply chain increases acceptance of the new industry solution
- Implementation of the EU packaging guidelines PPWR
- Opportunities through fulfilment of the requirements of the Taxonomy Regulation
- Cost benefits from the plastic tax

Together, we are positioning ourselves for more sustainability in the green industry with the aim of avoiding 40,000 tonnes of single-use plastic or 220,000 tonnes of CO2 equivalent every year!

Euro Plant Tray
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