# Packaging requirements Fruit & Vegetables

EK INT | July 2024

Requirements for environmentally friendly and sustainable design of packaging

# Presentation of the Kaufland Packaging Strategy

- **Reduce plastic.**
- **Maximize recyclability.**
- **Promote circular economy.**

***"As little packaging as possible, as much packaging as necessary"***

**Reduce and avoid the use of unnecessary packaging materials**

**Increase the amount of recycled material [Usage of 25% recycled plastic on average (PCR)]**

**Make 100% of our private label packaging maximally recyclable**

**Reduce the use of plastics by at least 30% until 2030 in our private label packaging**

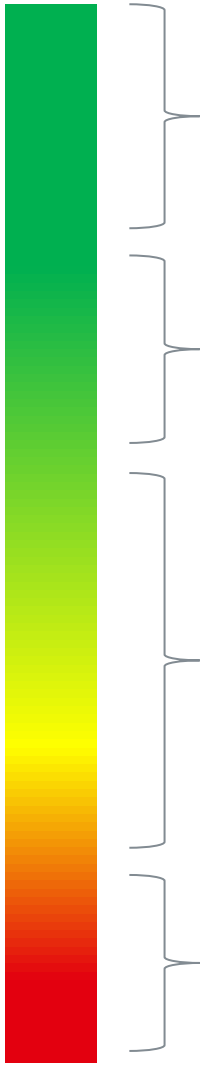
We have not been using black plastic in our own brand packaging since the end of 2021 .

PACKAGING REQUIREMENTS FOR FRUIT AND VEGETABLES

# Materials to use

**In generel:**

- Box inserts exclusively made of fiber (fiber mould or paper)
- Recommendation: use of EPS (European Pool System) crates instead of one-way
- Avoid using absorbent pads and unnecessary components



## Priority 1: without any packaging

- For products with natural protection, optionally with sticker, sleeve, label or laser engraving
- For products whose shelf life is not extended by packaging
- Coatings (eg wax) as an oxygen barrier

## Priority 2: fiber-based packaging

- For products whose properties require packaging (e.g. for mechanical protection or for bundling several individual items)
- Optimally, fiber materials with silphium content
- To be used in the form of trays, banderoles, bags, wrappers & boxes

## Priority 3: plastic packaging

- For products whose properties require packaging (e.g. for mechanical protection or for bundling several individual items)
- In the form of nets, bowls/trays, banderoles, flow packs, bags, cups or pots
- Material selection:
  - **Priority 3.1:** Polyethylene (PE) or polypropylene (PP)
  - **Priority 3.2:** PET in exceptional cases (if selected: as high a proportion of recycled material as possible)

## To avoid:

- Composite packaging made of several types of material
- PVC, PA, EPS (Styrofoam)
- Wooden boxes for sales packaging (worse recyclable as corrugated cardboard)

# Nets / Girsacks

A net or Girsack is a popular packaging variant that can be used to bundle piece goods. Nets offer no mechanical protection, but are very light.

**Do's**

- Use of the lightest possible colors, both for the network as well as the label
- Labels and net are made of the same material
- Material: PP, PE
- Use woven instead of extruded nets (weight reduction)
- Avoid metal clips

**Dont's**

- No use of cotton (defects in recyclablilty)
- Avoid using dark/black colors
- Avoidance of non-recyclable labels (thermal transfer printing); use plastic labels instead

Regular clip net

Girsack:

Target weights:

| Capacity | Net + label | Girsack |
|---|---|---|
| ≤250g | ≤1,5 g | Select net + label |
| 500g (lemon, tangerine) | ≤ 2,3 g | approx. 3,5–4,5 g |
| 1kg (brussels sprout, onions) | ≤ 3,0 g | approx. 5,5–7 g |
| 2kg (potatoes, onions) | ≤6 g | approx. 11–12,3 g |

# Flowpacks / bags



With this packaging variant, a sealed plastic bag (= flowpack) completely encloses the product. A bag is a similar film packaging, which is not sealed, but closed by a clip or an adhesive strip.

## Do's

- Use of transparent PP or PE
- Use of mono material
- Foil printed directly at best, alternatively label:
  - <50% of the total surface
  - Label and foil made of the same material
  - Use of water-/ hot-alkine-soluble adhesive
- In individual cases: ise of micro-perforations (70-150 µm) to extend shelf life of the product

## Dont's

- Use of composites (e.g. plastic film with paper label) and barrier layers
- Use of non-soluble adhesives
- Use of additives that reduce the density of the packaging material so as not to complicate the sorting before recycling



Target weights:

| Fill weight | Usual weights | Target | Material thickness |
|---|---|---|---|
| 2000 g | 12,3-15 g | ≤ 12,3 g | < 70 µm |
| 1000 g | 11-13,6 g | ≤ 11,3 g | < 60 µm |
| 750 g | 9,7-11,9 g | ≤ 9,7 g | < 60 µm |
| 500 g | 3,8-4,5 g | ≤ 5,8 g | < 50 µm |
| 250 g | 2,8-4,2 g | ≤ 2,8 g | < 50 µm |
| 50 g | 2,5-3,5 g | ≤ 2,5 g | ≤ 50 µm |

# Trays made of fiber

The trays are usually provided with an additional component (net, flow pack, sealing film, shrink film, etc.). Bowls made of fiber materials (fiber casting or cardboard) are to be preferred to bowls made of plastic.

**Do's**

- At best, with a share of silphium or alternative fiber-based raw materials
- FSC certification and highest possible share of recycled material
- No additional outer packaging (such as flow pack) around the tray (exceptions possible if the product quality cannot otherwise be guaranteed)

**Dont's**

- Use of wooden bowls / boxes
- Use of metal tacking needles for cardboard trays
- Labeling (instead of direct printing)

Target weight:

| Filling quantity | Recommendation | Target weight in g |
|---|---|---|
| ≤125 g | paperboard / fiber mould | <10 g (fiber mould) |
| ≤250 g | Paperboard / fiber mould | <14g (Vollpappe)<br><18 g (fiber mould) |
| ≤ 500 g | Paperboard, corrugated board, fiber mould | <21 g (paperboard/ corrugated board)<br><30 g (fiber mould) |
| ≤ 1000 g | Corrugated board (E-/B-wave) | <26 g (corrugated board) |

# Trays made from plastics

The trays are usually provided with an additional component (net, flow pack, sealing film, shrink film, etc.). Bowls made of fiber materials (fiber casting or cardboard) are to be preferred to bowls made of plastic.

## Do's

- Material selection:
  - **Prio 1:** transparent plastic trays made of PP
  - **Prio 2:** transparente plastic trays made of PET (with highest possible share of recycled materials, preferably from tray–to–tray recycling)
- No additional outer packaging around the tray (Exceptions possible if the product quality cannot otherwise be guaranteed)

## Dont's

- No coloured plastics
- No composites or coatings
- Use of adhesives that are neither water–soluble nor alkine soluble


Target weights:

| Capacity | Target weight in g |
|---|---|
| ≤125 g | 3,8–5,5 g |
| ≤250 g | 7,5–9 g (depending on shape) |
| ≤ 500 g | 12,1–14,5 g |
| ≤ 1000 g | ≤ 18,5 g |

# Banderoles

Banderoles are tapes made of paper or plastic that span unit goods and thus keep the articles in shape.

The light stripes protect the product only slightly from external influences, but are usually applied to articles with a natural protective function (e.g. bananas) and thus separate individual sales units.

**Do's**

- Priority: Use of paper bands instead of plastic bands
- For Papier:
  - Use of recycled cardboard
  - Check whether silphium paper can be used
- Adhesive thickness <12 µm
- For plastics:
  - Use of PP– oder PE– mono material film
  - Use of transparent white/light colored plastic

**Dont's**

- For paper:
  - Avoidance of additional coatings or plastic laminates
- For plastic:
  - Avoidance of dark printed / dyed plastics

Source: https://www.ats-tanner.com/de/anwendungsbereiche/lebensmittelverpackungen

# Paper packaging: wrappers, bags, boxes

Paper packaging is used in a wide variety of shapes and product groups. In addition to asparagus, grapes and potatoes, fresh herbs are sold in paper packaging.

## Do's

- Use of recycled paper
- If possible: use paper with silphium content
- If labeling: make sure to use paper labels
- Please note:
  - For bags: reinforce carrying handle, observe wet strenght
  - For wrappers: observe wet strenght
  - Folding boxes: choose the lightest grammage

## Dont's

- Use of viewing windows or other plastic components
- Use of additional coatings or plastic laminates
- Application of labels instead of direct printing

# Plastic cups and buckets

Cups / buckets are often used for tomatoes and to-go salads, and the cups are usually provided with a snap -on lid and some are sealed with a plate.

**Do's**

- Use of transparent or white plastic
- Priorities:
  - Prio 1: PP
  - Prio 2: PET (with the highest possible proportion of recycled material from tray-to-tray recycling)
- Sealing lid: use cup material also for cup (no aluminum lid on PP cup)
- Printed directly at best

**Dont's**

- Use of solid-colored / dark printed plastics
- Use of composite material of any kind
- Labeling or sleeve (instead of direct printing)

Target Weight:

| Capacity/Type | Target weight in g |
|---|---|
| **1 kg cup/bucket** | < 20 g |
| **500 g cup/bucket** | < 8,7 g |
| **250g cup** | < 5,5 g |
| **150g cup** | ≤ 4,5 g |

# Plant pots

**Do's**

- As lightly colored plastic as possible
- Highest possible amount of recycled plastics
- Materials: PP or HDPE
- Use of paper wrappers

**Dont's**

- Use of dark colored / black plastics

SILPHIE

# Silphie paper

- Natural look
- Tactile fiber structure
- Increase in biodiversity
- Dual use: biogas production as well as packaging
- Reduction of carbon footprint
- Group-internal material and internal recycling loop




**More at www.out-nature.de**

# Examples for improvement

- EPS (foamed plastic) should not be used as transport protection. Instead, alternatives made of fiber shall be used.

- The flow pack is too big and labels shall not be made from paper. Instead, PP or PE shall be used.
- A wooden bowl with metal clips is used. Alternatively, a cardboard tray should be selected for better recyclability.