

Cracking The Mold:

How Innovation Kept Pecan Packaging Fresh



Innnovative Material Leads to Prevention of Mold.

To ensure freshness upon arrival, pecans must be packaged as dry as possible with consistent ventilation. In airtight sea containers, moisture from the nuts can evaporate and create a humid, rainforest-like environment during transit.

We addressed this by using strategically placed desiccant pouches to absorb excess moisture and enhancing airflow within the bag itself. This combination helped maintain optimal conditions and targeted the specific problem area to protect product quality.

Our office: 6050 Horizon West Parkway, Grovetown, GA 30813 info@palmetto-industries.com | wwww.palmetto-industries.com Client Industry: Agriculture

Location:

Southeast

Objective

A longtime pecan customer faced mold issues during overseas shipments due to high nut moisture from excessive rain. Although using ventilated bags, the closed-top design required for export trapped moisture at the top.

We aimed to create a packaging solution that allowed moisture to escape while still meeting international shipping standards, preventing mold and preserving product quality.



"Palmetto assessed our situation and immediately knew how to solve our issue. Their solution was spot on!" -Buyer



Targeted Design Proven Performance

To address mold formation during overseas shipments, we began by analyzing every aspect of the customer's process. From moisture readings and ambient temperatures to loading procedures and container conditions, our goal was to identify where airflow was being restricted—and how to fix it without compromising shipping requirements.

\checkmark

Diagnosed the Root Cause

By reviewing product moisture levels (23% vs. a normal 16%), along with transit temperatures and container conditions, we determined that excess humidity was becoming trapped inside the closed-top bags during shipment. The sealed environment was restricting natural evaporation and fostering mold growth.

\checkmark

Identified a Ventilation Gap

Our evaluation showed that while the ventilated side panels on FIBCs offered cross-flow of air, the top inlet spout—necessary for container transport—became sealed after loading, stopping airflow where it was needed most. This was the critical weak point contributing to spoilage.

Engineered a Smart Fabric Upgrade

To solve the issue, we introduced a mono-extruded polypropylene mesh with a 20 ppi weave at the top panel. Commonly used in agriculture, this mesh allows moisture to escape even when the bag is cinched closed. It provided targeted airflow, reduced humidity buildup, and maintained the integrity of the shipment.

Overview

We solved a mold issue during overseas transit by replacing the FIBC's top panel with a breathable polypropylene mesh. This allowed moisture to escape while maintaining bag integrity and compliance with shipping requirements.

The result was a simple, effective solution that protected the product, prevented spoilage, and saved the customer from substantial losses—all by listening closely and thinking beyond standard packaging.



Key Benefits

O1 Product Protection Prevented mold formation and preserved product quality throughout transit.

O2 Cost Savings Avoided major spoilage-related losses—saving the customer thousands, despite a minor material cost increase.

Interested in a Custom Solution?

If you're facing challenges with your packaging design or want to explore how our tailored solutions can protect your product and bottom line, we'd love to help. Contact us to learn more.

> 1–866–589–2011 info@palmetto-industries.com www.palmetto-industries.com