



IFF Food Protection

THE FRYING CALCULATOR

Saving money, reducing waste,
and minimizing CO₂ output

Foods undergoing rigorous production processes, such as frying, face significant oxidative degradation and flavor changes. These undesirable effects are largely influenced by the quality of frying oil absorbed.

How can we help?

IFF offers solutions to enhance the quality and prolong the lifespan of frying oil. The benefits of using these solutions range from optimized time and cost efficiency to reduced oil waste for improved sustainability credentials. But how can we quantify those benefits?

Let's pioneer the future of frying, together.



Quantifying the benefits of protection:

THE FRYING CALCULATOR

Why did we develop the frying calculator?

We aim to optimize the production of fried foods and snacks by measuring the benefits of applying IFF Food Protection technologies in frying processes. Ultimately, we identify the optimal solution to meet the needs of manufacturers.

How does it work?

Based on data from numerous tests and industrial trials using IFF formulations and market-standard antioxidants, this tool **calculates and compares** the efficiency of different solutions in extending the frying oil durability.

Which benefits can it quantify?

Based on the input data related to the frying process, the calculator **estimates reductions** in:

- **Frying oil quantity**
- **Costs**
- **CO₂ emissions**

Discover more in our case studies.

Unlocking the Frying Calculator

MODEL CASE STUDIES

	Customer need / challenge	Our solution	Estimated benefits
Maximize flavor, minimize oil & time waste	The fast-food restaurant fries chicken nuggets in a 20L fryer. To maintain the quality of their fried products, they replace the oil after 8 hours of frying, when the total polar material in the oil reaches 16%. They want to enhance productivity by reducing downtime caused by oil changes using a naturally sourced solution.	With GUARDIAN® SYNEROX HT, derived from rosemary extract, the customer can confidently fry in the same oil for an impressive 14 hours. This optimization directly impacts productivity and operational efficiency. SYNEROX also improves the taste of fried foods, allowing the fast-food restaurant to serve crispy, flavorful chicken nuggets without frequent oil changes.	SYNEROX HT could daily: <ul style="list-style-type: none"> • Reduce costs of oil by 44% • Avoid 9 kg CO₂e (eq)
An alternative to a synthetic antioxidant	A fried fish producer wants to improve the taste of their product. They also aim to find an alternative to TBHQ, which they add to sunflower oil for frying. They shared specific production details - such as changing the oil every 9 days, an oil absorption rate of 5%, a total fryer capacity of 2000 liters, and a daily production output of 600 kg of fried fish. They are open to explore both natural and semi-synthetic options.	Two products identified as best-suited solutions using the Frying calculator are rosemary-extract based GUARDIAN® SYNEROX HT, and GUARDIAN® SYNEROX G, a semi-synthetic blend specifically formulated for outperforming cost-efficiency.	SYNEROX HT could daily: <ul style="list-style-type: none"> • Reduce oil costs by 19% • Avoid ~17 kg CO₂e (eq) SYNEROX G could daily: <ul style="list-style-type: none"> • Reduce oil costs by 33% • Avoid 30 kg CO₂e (eq)
Tastier & longer lasting snacks – sustainably	The potato chips manufacturer wants to improve taste and prolong the shelf-life of their product. They also want to reduce oil waste and costs. To maintain oil quality standards, they change the oil in all 2000 L 5 tanks weekly. The customer specifically requires a naturally sourced solution.	Rosemary extract-based GUARDIAN® SYNEROX HT was identified as a best-suited solution. It is highly effective in improving and maintaining the taste of fried snacks, allowing significant shelf-life extension. On top, it extends the durability of the frying oil for waste and cost reduction benefits.	SYNEROX HT could: <ul style="list-style-type: none"> • Reduce costs of oil by 44% • Avoid 388 kg CO₂e (eq) per week

We look forward to helping you fry more effectively and sustainably.

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