Nutriswiss AG is specialised in refining high-quality fats and oils using a combination of mild physical refining processes.

GENTLE REFINING:

efficient reduction of contaminants in fats and oils

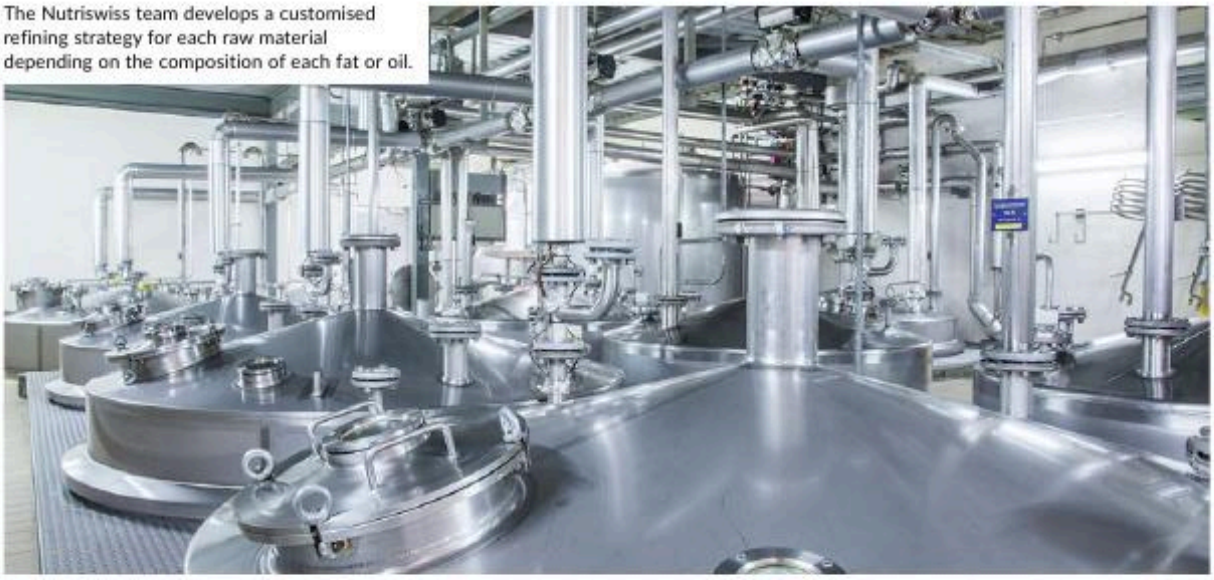
Swiss-based Nutriswiss specialises in refining high-quality fats and oils using a combination of mild physical refining processes to efficiently purify oils, optimise their taste and remove or significantly reduce contaminants. After treatment, the oils are virtually free from unwanted components

As a contract manufacturer, Nutriswiss refines a wide range of oils for the food, pharmaceutical and cosmetic industries. Its state-of-the-art processes not only enable the gentle refining of oils, but also effectively reduce process contaminants, pesticides, mineral oil residues, plasticisers, free fatty acids and other contaminants while preserving micronutrients.

The quality of fats and oils starts at the source of the raw materials as pollutants can be introduced from the environment during cultivation or later during transport and storage. Contaminants such as pesticides regularly find their way into the plants and their seeds. They can also easily absorb MOAHs (mineral oil aromatic hydrocarbons) from the environment, e.g. from exhaust fumes, tyre abrasion or machine lubricating oil. Tropical products such as coconut oil, palm oil, shea butter, cocoa butter etc. usually enter Europe by sea. By the time they arrive, the raw materials have already been pumped into other tanks and ships several times. Open loading processes and contact with pipes, ambient air and other transported goods can lead to the accumulation of harmful substances in the raw material. Due to their chemical structure and lipophilic properties, MOAH, for example, accumulate easily, and contact with oxygen causes oil to oxidise and become rancid. To avoid any negative impact on the product, Nutriswiss has established its own very strict standards. Raw materials for Nutriswiss are responsibly sourced and filled into ISOTAINERs in the country of origin in accordance with food-grade standards, sealed and then transported directly to the refining plant in Lyss, Switzerland.

Maximum food safety is crucial

Nutriswiss is a specialist in the purification of oils and fats and is aware of this: the degree of necessary treatment of the raw material varies greatly, which is why all processes are kept as flexible as possible. In this way, Nutriswiss can get the best out of each starting material – with the exact analytical and sensory properties that match the desired end product. Innovative and gentle process steps have been integrated to reduce MOAH and other unwanted residues. In the Nutriswiss refinery's quality laboratory, the first step is to create a comprehensive profile of key figures for each freshly incoming crude oil and a customised process plan for each area of application. In contrast to the traditional refining of vegetable oils, Nutriswiss does not require time-consuming and



The Nutriswiss team develops a customised refining strategy for each raw material depending on the composition of each fat or oil.

temperature-intensive processes to remove pesticides and mineral oil residues. Instead, the company relies on physical treatment using state-of-the-art distillation technology, followed by mild deodorisation. This minimises the formation of process contaminants, while pesticides, MOSH/MOAH, polycyclic hydrocarbons (PAH) and plasticisers such as DEHP are significantly reduced. At the same time, valuable ingredients are protected and yield losses are minimised. In this way, oils that would be of limited suitability for further processing or trade due to intense flavour, colour or exposure to environmental and transport contaminants become safe ingredients.

Thanks to mild refining methods, Nutriswiss is already below the expected future MOAH limits.

Gentle physical refining leads the way

Modern distillation technology is successfully used to efficiently remove or significantly reduce contaminants in fats and oils. However, it is important that product quality remains stable or is even improved compared to typical refining processes. Nutriswiss has therefore carried out extensive tests to determine the ideal process parameters for balancing purification and quality targets. With this technology volatile components such as pesticides and other contaminants evaporate more easily under low thermal stress. When the process is carried out, the stability of the oils is fully maintained. However, this requires extensive know-how and many years of experience. Unlike conventional physical refining at high temperatures, which creates process contaminants and destroys valuable micronutrients, the thermal load in "mild refining" processes remains comparatively low. The process is therefore also suitable for sensitive raw materials such as omega-3-rich seed oils such as rapeseed or linseed oil, algae oil or other speciality oils.

Producers and processors of vegetable oils are confronted with ever stricter legal limits. These laws reflect the political and social endeavour to achieve the highest possible level of food safety. Nutriswiss believes that a legal framework is important to ensure that all parties in the supply chain play their part in reducing harmful substances. With its gentle physical refining methods, Nutriswiss is already well prepared for the expected stricter limits for MOAH in oils and fats in the future. FDT