



A healthier option



Palm oil is an excellent frying medium as it is naturally resistant to breakdown and off-flavour development at high temperature. This is due to the presence of an equal amount of saturated and unsaturated fat in the oil, with only 10 percent of polyunsaturated fat. At high temperatures unsaturated fat, in particular polyunsaturated fat, reacts rapidly with oxygen leading to rancidity, off-flavours and polymer formation.

Saturated fat is about 10 times more resistant to breakdown than unsaturated fat and this translates into a longer life for palm oil. **Due to the high stability of palm oil, higher frying temperatures can be used allowing the manufacturer to adjust product texture.**

At room temperature palm oil is a semi-solid with a smooth texture similar to butter. At temperatures used for frying chips and crisps all fats and oils are liquid and have a similar performance as a heat transfer medium. But during cooling palm oil will tend to become firm again, resulting in a 'drier', less oily texture.

LIQUID FORM OPTION

When a solid fat is not desired, palm oil is also available in a liquid form called palm olein. Palm oil is actually a mixture of liquid and solid components. The liquid portion, palm olein, can be squeezed out in a high pressure expeller press. **Although palm olein is a liquid, it still contains almost the same level of stable saturated fat and a low level of polyunsaturates.**

Large-scale commercial quantities of palm oil became widely available. **Today palm oil is the number one edible oil in the world in terms of consumption and production. Consumption of palm oil has been steadily increasing in Europe for more than 10 years, due to low cost, high stability for fried and baked goods,** and a versatile range of solid and liquid textures.

It is typically lower in cost than other vegetable oils in Europe, including soyabean, rapeseed and sunflower oils. In North America it is cost neutral to soyabean oil and lower than

canola oil and sunflower oil. Palm oil usage only began in the USA in 2006 caused by the introduction of a trans fat label on certain foods.

Natural palm oil is a healthy alternative to partially hydrogenated oils and is a cost effective, versatile natural product that is functional in almost any frying, baking and snack application.

Perhaps the main nutrition concern with fats and oils today is saturated fat. Saturated fat is known to raise blood cholesterol levels and is therefore believed to increase risk of heart disease. Consumption of oil and fats that are high in saturated fat are consequently believed to increase heart disease.



TRANS FATS DANGER

Animal fats and palm oil were replaced with partially hydrogenated soyabean and cotton seed oils, the main domestic oils within the USA. But hydrogenated oil contains transfat, which we know today is much worse than saturates. As transfat is replaced by healthier saturated fat, food manufacturers are again looking at saturated fat reduction.

Palm oil, although dubbed a 'saturated fat' is actually a natural balance of saturated and unsaturated fat – it contains 50 percent of each. For every gram of saturated fat added to a food, a gram of unsaturated fat is also added.

Saturated fat content in palm oil can be reduced further by blending with vegetable oil, while maintaining low cost and high stability. But within the scientific community there is growing doubt that saturated fat is actually bad for the heart. Saturated fats have been found to significantly increase good cholesterol (HDL cholesterol) and that counteracts the negative effect of bad cholesterol (LDL cholesterol). The largest human study measuring the effect of different fats on actual heart disease was published early in 2010. Lasting 23 years with 340,000 participants they failed to find any link between saturated fat and heart disease.

The use of unsaturated oil like sunflower oil in foods is normally considered to be a healthy option. But in the case of frying, unsaturated fat could be less healthy.

Unsaturated fat is oxidized easily at high temperature and the kind of byproducts it produces are known to damage DNA and proteins in humans, implicated in diseases of aging such as arthritis and some types of cancer. Saturated fat is more stable and does not generate these reactive byproducts. So for frying saturated fat could be a healthier option.



During storage of Potatoes CIPC is crucial

Many stored crops will have received an initial CIPC treatment and now consideration has to turn to managing the correct timing of subsequent applications.

If the right timing is not there then it can reduce the storage time of potatoes and you may risk exceeding the 10mg/kg MRL residue limits.

And some eye movement does not necessarily mean that the initial application was ineffective as CIPC needs some active growth to be taken up effectively.

Often the eyes just open, then take up available CIPC and growth is suppressed again.

It is worthwhile waiting, say a week, to see if the sprouting moves to a bit further, rather than just jumping straight in with an additional CIPC application.

It is recommend growers not to make early re-applications. It is also vital that records of the total CIPC application to a crop are available.

It would be disastrous if a crop that had been intended for the processed or chip shop market and received corresponding levels of the suppressant, were then sold to the fresh market.

This could easily be prevented if merchants, processors and packers all have access to application

Records – this should be part of their due diligence.

There is no alternative sprout suppressant for use in the potato processing and chipping sector.

CIPC residues in potatoes are being very closely monitored and any evidence of the correct total application or MRL exceedance will have serious consequences on the quality of potatoes during processing.

Coloured Potatoes Healthier

In the first known study to address the effects of Potato consumption on antioxidant status, oxidative stress and inflammation in humans, a team of research scientists worked with a group of Washington adult males to test the hypothesis that antioxidants from coloured potatoes would decrease susceptibility to chronic diseases.

In the six-week study, three groups of 12 healthy, 18-40 year old males from Washington State University and the surrounding communities consumed 150g of cooked potatoes-white, yellow or purple-fleshed-once a day.

Blood tests were performed of the beginning and at six weeks to analyse for indications of antioxidants status, oxidative stress and inflammation.

To maximize retention of bioactive compounds, whole potatoes were boiled in a steam kettle for about 25 min, immediately cut into quarters, frozen in sealed plastic bags, and stored at -35C until use. To minimize destruction of the bioactive compounds, potato recipes used quick-cook methods such as soups mash and stir – fry.

The potato is the most commonly consumed vegetable. In addition to high concentrations of vitamin C and iron, the highly coloured potato varieties are rich in antioxidants, including phenolic acids, anthocyanins and carotenoids. Consumption of foods rich in antioxidants is associated with a lower incidence of chronic diseases such as cardiovascular disease, atherosclerosis, rheumatoid arthritis and cancer.

Overall, the scientists documented that consumption of both yellow and purple potatoes decreased oxidative damage and inflammation in participants compared with those who consumed white potatoes.

“This offers consumers on improved nutritional choice in potato and potato products consumption,”
(Ref. Potato Processing International)

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