The Main Ingredient
MALABAR
A Bi-Monthly Newsletter from Malabar Super Spice Co. Ltd. March/April 2010

CHECK OUT OUR WEBSITE! MALABAR's full catalogue is available online. **www malabarsuperspice.com**

Upcoming Events

May 8 – 13, 2010
IFFA Delicat, International Trade Fair for the meat industry
Frankfurt, Germany
www.messefrankfurt.com

IFFA
GERMANY

Come Visit MALABAR at IFFA 2010 in Frankfurt, Germany

Come see us at the RAPS Germany booth at **IFFA 2010 - Hall 6, Booth D10.**

We'll be there to greet you throughout the day on **Tuesday May 11th** and would love to say hello, and introduce you to RAPS products as well as RAPS technical staff.

When you visit the booth on the 11th, pick up a free set of professional RAPS BBQ Mitts to take home! **See you there!**

For more information, visit our website www.malabarsuperspice.com.

Keeping it Fresh

For processors, the chemical reactions that take place during and after processing are absolutely vital to the flavour and usability of the final products. One of the most important of these is the reaction of fats, meat proteins and oxygen both during and after meat processing. The management of these reactions make the difference between good products and bad, and can significantly alter the shelf-life of processed meat products.

The Main Components

Meat has been a major component of the human diet for over 2 million years. Meat proteins are broken down during digestion, releasing amino acids that are needed for the repair and growth of human cells.

After water content, animal fat is the next major chemical component in the carcass of a meat animal. Fats make up 18-30% of the carcass weight of market steers and 12-20% of the live weight of the average market hog. The fat category usually includes all of the lipid species, including triglycerides, phospholipids, sterols and sterol esters. Fat in meat can be between the muscles (intermuscular), within the muscles, as in marbling (intramuscular) or subcutaneous (under the skin).

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FROM THE LAB

A Natural Solution to Oxidation – Protecting Flavour & Colour in Meat Products

Meat and sausage products with a high fat content are especially vulnerable to auto-oxidation. If oxygen is in contact with the fat complex, free radicals are created. The result is rancidity, warmed-over flavour, and poor colour development.

Malabar has completed testing of RAPS Stabiloton, a natural ingredient formulated to protect the flavour and colour of your meat products, with great results.

In this issue, ***From the Lab*** *looks at how Stabiloton works.*

STABILOTON®
Natural Antioxidant

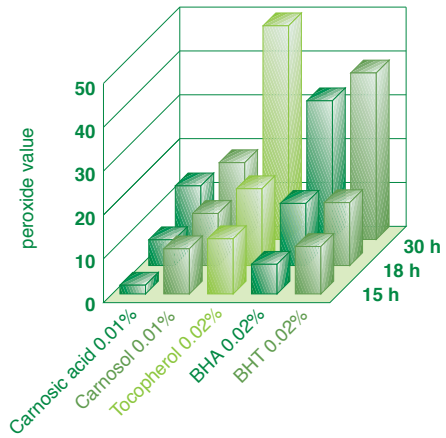
Stabiloton is the extract from the rosemary plant which naturally contains a **high content of antioxidative carnosic acid.** The rosemary plant (Rosmarinus officinalis L.) contains a wide range of highly effective antioxidant ingredients from the 'phenolic diterpene' group. Of these ingredients carnosic acid has the highest antioxidant effect. Raps' utilizes a patented gentle production method of supercritical oil extraction that safeguards the components of the rosemary plant without temperature or oxidative stress. This process also allows for a higher content of 17% carnosic acid to ensure maximum protection at a very low dosage rate.

The high antioxidant effect of carnosic acid and carnosol in Stabiloton in comparison to conventional antioxidants has been confirmed by numerous in-depth laboratory tests. Carnosic acid or carnosol was added to a fat matrix and the peroxide value was measured at regular intervals. Scientific studies confirmed the effectiveness in various food applications including frozen as well as chilled meat products. Stabiloton is also heat stable to support shelf life of cooked meat products.

Effect of Stabiloton on Colour Stability

Besides the antioxidant activity, Stabiloton Rosemary Extract can also protect the desirable red meat colour of fresh ground meats. Fresh meat colour depends on 'myoglobin' that stores oxygen for aerobic metabolism in the meat muscle. Myoglobin in an iron-containing molecule, and the chemical state of the iron is a key factor contributing to meat colour. 'Oxymyoglobin' gives the meat the red colour, which forms 'metmyoglobin' when oxidized, resulting in a brownish meat colour. **Studies have shown that the red colour of raw ground beef (with 20% fat) was significantly improved by the addition of Stabiloton Rosemary Extract compared to control samples. Similar results were also found with cooked ham products.**

Advantage of STABILOTON compared to BHA, BHT and Tocopherol



The smaller the bar, the less autoxidation has advanced in the fat. The antioxidant ingredients carnosic acid and carnosol in STABILOTON show a clearly higher antioxidant effect, even when using low addition rates.

Typical Applications and Shelf Life Results

Salami: Shelf life of salami can be prolonged by up to seven months (when stored frozen).

Cooked Ham: Shelf life can be prolonged by up to five months (when stored frozen).

A key benefit of extending the shelf life for frozen meat products is the application for inclusion in frozen dishes and frozen pizzas.

Ground Fresh Meats (for burgers, meatballs, fresh sausage): with Stabiloton, the creation of undesired "warmed over flavour" is effectively prevented, for both chilled or frozen products, while improving the colour.

Usage Levels: Low usage rates of 0.2 to 0.8 g per kilogram of meat allow for an economical and easy to use application. Stabiloton is added as early as possible in the process, since oxidation is a chain reaction.

In Summary: Why Use Stabiloton?

- clean label: "rosemary extract"
- protection against fat oxidation
- protection against rancidity and off-flavour
- protection against discolouring and colour decomposition caused by oxidation
- longer shelf life for both refrigerated and frozen meat products
- low usage rate

Stabiloton is available in a liquid or powder, and is formulated for solubility in oil or water.

Make it with MALABAR Super Spice

Keeping it Fresh

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And What About the Fat?

Fat, as part of a regular diet, performs many vital functions. It is a concentrated source of calories, and is responsible for carrying fat-soluble vitamins. Fat improves taste & palatability, improves growth rates and increases work capacity, as well as supplying essential fatty acids and phospholipids, which are building blocks for the body's cells, including cell walls and cellular components.

The amount of saturated fat in meat has been reduced in recent years, so that it makes up less than half of the fat in pork and beef and 51% of the fat in lamb. Saturated fats are commonly referred to as the 'bad' fats as they have been linked to high blood cholesterol and atherosclerosis. Although the chemistry can seem complex, it is important to understand the make up of saturated fatty acids, and that all saturated fats are not equal in their effect on the health risk factors.

Processed Meats: Flavour is King

Fat is a key contributor to flavour, but it is also essential to juiciness and texture. Heat processing results in a series of thermally induced reactions that contribute to the aroma and the flavour, and the fat mixed with the meat plays a key role in how both desirable and undesirable aromas are formed.

'Oxidation' of the unsaturated fats results in the development of odours and flavours associated with rancidity, as well as colour and texture deterioration. Mechanical boning, mincing, restructuring and cooking can cause significant disruption of the cellular structure of meat and fat, allowing 'proxidants' to mix with the unsaturated fatty acids, and generating free radicals. This 'autooxidation' results in the formulation of hydroperoxides which then breakdown, causing the off-flavours to develop in meats that are precooked, chilled-stored and then reheated. (This is commonly referred to as Warmed-Over Flavour (WOF).) The rate and course of oxidation of lipids are influenced by light, local oxygen concentration, high temperatures, presence of catalysts and water activity.

Antioxidants

Antioxidants are ingredients or additives that are able to slow the rate of oxidation, by reacting with the free radicals. Many food products will include the antioxidants BHA (butylated hydroxyanisole) and BHT (butylated hydroxytoluene). Oxygen reacts preferentially with BHA or BHT rather than oxidizing fats or oils, thereby protecting them from spoilage, particularly oxidative rancidity. (In addition to being oxidizable, BHA and BHT are fat-soluble.) Many packaging materials incorporate BHT and it is added directly to shortening, cereals, and other foods containing fats and oils. However BHA and BHT are not allowed for use as additives in meat and poultry products in Canada.

What's New In Antioxidant Additives?

To support the burgeoning interest in clean labels and a return to more natural food options, there is a tremendous amount of research taking place looking for natural alternatives to more traditional preservatives. Here are a few that have shown some promise:

Casein protein: The hydrolysis of milk casein proteins results in small peptides, which may have antioxidant affects when tested in beef and poultry products.

Dried Plums: Pureed prunes may be effective as replacements for traditional antioxidants in some meat applications, like sausages and ready-to-eat beef roasts.

Natural pigments: Natural carotenoids like 'zeaxanthin' and 'norbixin' may extend the shelf-life of sausage products, outperforming sodium erythorbate in some tests.

Oregano oil: Oregano oil may reduce fat oxidation in processing trials and in good colour stability, but also results in a higher 'perception' of off-flavour, and a lower taste-rating for the end products. Research continues to determine if oregano oil can be used effectively without taste issues in various applications.

Green tea extract: Green tea is known for it's antioxidant properties. The extract may provide these antioxidant and colour improving properties to raw and heat-processed meat and poultry products in food applications. We are currently testing this product here at Malabar for its effectiveness to extend product shelf life and will provide updates in upcoming newsletters.

Rosemary Extract: Rosemary extract is one of the most effective natural antioxidants, and has been tested extensively. It is commercially available as an effective antioxidant for food processing applications, and is available from Malabar in the form of STABILOTON from RAPS. *For more information on STABILOTON, see* ***From the Lab,*** *in this issue.*

New Products for

CLEAN LABELS

The modern consumer's demand for CLEAN LABEL products is never more apparent than when purchasing meats, where your customers are looking for more natural products, without sacrificing flavour, shelf life or appearance. New for Spring 2010, Malabar has introduced three products to help you 'clean up' your labels!

Malabar's NEW Low-So Salt™ **#14510**

A modified potassium-based salt replacer specifically **formulated to replace Sodium Chloride salts,** but without the bitterness that can be found in other salt replacement products. Usage is 1:1, and tests have shown that flavour & functionality are easily maintained. **Start your low-sodium product line today!**

Natural Flavour Enhancer – Green Pepper Extract **#RA00682**

A natural replacement for MSG, this product boosts the overall flavour of your meat products, and can be labeled as a spice or a spice extract. Recommended usage is only 2 g per kilogram of meat!

Acerola Powder (Cherry Powder) **#RA91046**

A natural nitrite accelerator to replace sodium erythorbate or ascorbic acid in your formulation. With a recommended usage of only 3 g per kilogram of meat, acerola cherry powder is the perfect finishing touch to cooked ham and smoked sausage products.

To Order a Sample of any of the above or if you have a new flavour you'd like to try, contact us at **1-888-456-6252**, or email **lab@malabarsuperspice.com**

OUR PRESIDENT'S Message

COMMON SENSE, COMMUNICATION & COLLABORATION

These three ingredients are necessary for Canada to have a truly effective food safety program. I have received numerous calls from the processing community voicing complaints about plant inspectors, audits, and the ever-increasing costs that result from yet more paperwork and confused directives. Meanwhile inspectors are overextended by increased plant visits, suffer from a lack of effective training – training that should include the basics of food chemistry and meat processing – and are hobbled by regulations that remain ill-defined.

Meat processors and inspectors must work together with the common goal of ensuring that all meat products are safe to eat while being fit for purpose AND meeting consumer demands for quality and taste. Health Canada has created more food safety laws and regulations, and the CFIA has hired more inspectors but understanding and follow-through on the recommendations of the Weatherill Report is weak.

Food safety is not about the number of reports that are signed and dated, nor the frequency of inspector visits to check on these reports. **Food safety instead depends on a solid, united food safety team functioning effectively in every meat processing facility, across Canada.** Let's be clear – right now we do not have that. In order to serve consumers, ensure food safety, and maintain and grow solid businesses, we need it, and we need it now.

Yours in Food Safety,

Doris Valade
President
Malabar Super Spice Co. Ltd.

Did You Know?

The Weatherill Report includes 57 practical recommendations on preventing food borne illness in processed meats. The Conservative government committed 75 million dollars to ensure that ALL 57 recommendations are implemented.

For a copy of this report, see ***www.foodsafetyfirst.ca*** and click on the "Weatherill Report" tab.

MALABAR

For more information on any of the subjects covered in Malabar's newsletter, or to suggest topics you'd like to see covered in future editions, please contact Sara Alexander at marketing@malabarsuperspice.com.

Look for our next edition in May/June 2010.

***Malabar Super Spice Co. Ltd.**, 459 Enfield Road, Burlington, Ontario L7T 2X5 www.malabarsuperspice.com*

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