



Collagen casings

Safe - efficient

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## About Us

### CCTA(コラーゲンケーシング産業組合)について

CCTAの目的は、加盟各社の共通の関心事であるコラーゲンケーシングに関する規制や規則への対応を業界団体として効果的に行うことです。CCTAは新しい規制の検討やコラーゲンケーシングの普及のためのフォーラムを加盟各社に提供しています。

CCTAには管理委員会と2つの専門委員会があります。

**食品安全と規制の委員会**には、加盟各社より世界各国の規則の改定などを調査し、当局と交渉している専門家を集め、ケーシングユーザーの利益になるように努めています。

**コラーゲンケーシングの競合商品**については、開発や市場調査の専門家が世界のケーシング市場の動向を注視しています。

**コラーゲンケーシング産業組合**

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## Our History

The beginning of present day commercial production of edible sausage casings from bovine (beef and dairy cattle) collagen started in two separate centres.

The manufacture of collagen casings started in the 1930s based on research by German scientists. These early casings were tough due to the cross-linking chemicals employed. Cutisin started manufacturing large diameter salami casings in Czechoslovakia in 1933; this business prospered and in 1952 manufacture of smaller more tender casings commenced.

In 1953 the company Fibran was established in the Catalan Pyrenees in Spain, and two years later launched a range of casings in small and large diameters.

This German collagen-casing technology was based on what is referred to as the dry-extrusion principle; a second development, called the low-solids wet process, was developed in the 1950s by Johnson & Johnson in the USA. The J&J initiative grew out of the company's interest in developing surgical grade collagen products, and in 1958 they formed Devro Inc. to pursue the sausage casing business.

Throughout the 1960s, Devro expanded production in the US and the UK while it continued to refine its manufacturing methods. At the same time, the Naturin company in Germany entered the casing market with their product based upon the original patents of the 1930s.

In the subsequent 40 years there have been a lot of developments; in the 1970s, Nippi in Japan developed their own process to supply casings to their domestic market, Teepak started up in the US while in 1975, the Viscofan Group was established in Spain to manufacture artificial sausage casing products.

Also in the 1960s/1970s the casing technology used by Cutisin was spread to Russia and Ukraine (Belkozin), Poland (Fabios), and Serbia (Koteksprodukt), and subsequently a business (Wuzhou) was established in China.

The last 30 years have seen significant growth along with the meat industry which has changed from small, labour intensive, local processing to large, mechanized, regional and national meat product manufacturing corporations. There has also been reorganisation with Cutisin and the Teepak US factory now part of an independent Devro and Naturin and Koteksproduct part of Viscofan, while Nitta Gelatin entered the industry by buying the original Devro factory in the US.

During this time casing development has continued as the manufacturers have focused on innovation and the products from the different processes now overlap. Twenty first century sausage manufacturers can select from a wide range of suppliers when they need economical, uniform and safe edible casings.

## Collagen

### Introduction

Collagen is a very common, naturally occurring long fibrous protein with remarkable properties. It has been used for many years as the primary raw material for various applications in addition to sausage casings. These include uses in the biomedical and cosmetic fields as well as various uses in the food industry. It is also the base material for the extensive Gelatine industry.

The major use of collagen is for the production of sausage casings. In the past, sausages were made by stuffing a meat mix into the intestines of pig, sheep or other animals. The desire by sausage manufacturers for high speed stuffing, coupled with a reliable supply of casings, has meant that many producers have switched to collagen.

Collagen casings have many benefits. They are made from an inherently safe material and the collagen extraction methods used make the casings free from health risks. Traceability of the raw material sources is excellent.

Sausage producer benefits are:

- High yields
- Ready to use
- Consistent diameter
- Long lengths
- High speed filling
- Reduced "give-away"
- Long shelf life
- Simple packaging
- Stable supply
- Cost predictability
- Wide range of applications



#### Consumer benefits include:

- Safe and clean raw material
- Excellent regulatory framework
- Great edibility and bite
- Easy cooking
- Good "knack"
- Value for money
- Long history of consumer preference
- Good appearance

Collagen has been safely, successfully and effectively used for this purpose for over 50 years.

## コラーゲンとは

コラーゲンは自然界に存在する、長い繊維を持つたんぱく質で、顕著な特性があります。ソーセージケーシングだけでなく、長年にわたり様々な用途に使用されてきた素材で、食品業界だけでなく医薬、医療分野や化粧品にも使用されてきました。またゼラチン産業においても重要な原料です。

.とりわけ、ソーセージケーシングや食品フィルムの製造には重要な要素です。ソーセージケーシングの製造には牛、または豚の皮を使用します。

コラーゲンは可食性のケーシングやフィルムの製造に適しています。コラーゲンの繊維は強度があるので、ソーセージの高速充填や懸垂に必要となる強度を持った薄い被膜を製造することができます。また、水分や脂分が熱処理によって蒸発してソーセージが収縮する際に

は、コラーゲンもほぼ同じ比率で収縮するという特性があります。このような特異な性質をもつ可食性の物質は他にありません。

詳しくは[リテラチャー](#)のページをご覧ください。

## コラーゲンケーシング

昔ソーセージは豚や羊の腸に、肉と他の材料を詰めて製造していました。コラーゲンケーシングが多く使用されるようになったのは、ソーセージ製造者が、品質が良く、供給が安定していて、高速で充填できるケーシングを好んだ為です。

コラーゲンケーシングはひだ寄せされた筒状の形態で箱詰されています。50cm長にひだ寄せされているケーシングを伸ばすと、全長50mになるものもあります。

さまざまな太さのケーシングがあります。可食性コラーゲンケーシングは直径13mmから34mm位ですが、サラミ向けの太物は直径110mmまであります。また、着色をしたものもあり消費者や製造者の要望に応えることができます。

コラーゲンケーシングの業界は発売当初から急速に成長し続けてきました。現在ではCCTAの加盟企業のコラーゲンケーシングの年間の総販売量は50億mを越えます。(地球125周分)現在では、世界中で何百種類ものコラーゲンケーシングを使用したソーセージが作られています。

## コラーゲンケーシングの利点

### トレーサビリティ / 安全性

コラーゲンケーシングはトレーサビリティや安全性の面で安心して使用できます。コラーゲンケーシングは安全な原料で製造されています。さらに、原料からコラーゲンを抽出する際に行われる処理により安全性が増すので、コラーゲンケーシングの健康へのリスクはありません。

### 生産性の高さ

可食性コラーゲンケーシングは、開封後すぐに使用することができます。天然腸よりも1本あたりの長さがあり、高速での充填が可能なので生産性を向上させることができます。またケーシングの長さや径のバラつきが少ないため、製造ロスを減少させることが可能です。

### 使い方が簡単

可食性コラーゲンケーシングは開封後直ぐにノズルへの装填が速く、簡単にできます。供給も安定しています。

### 製造コストの低減

コラーゲンケーシングは冷蔵庫に保管する必要はありません。使用方法が簡単で充填する前にロスが出ることはありません。高い生産性、あらゆる段階での製品の均一化、労働力の減少により製造コストの低減ができます。また、品質保証期間が長いことも大きな長所です。

### サイズの均一性

径と長さが均一なソーセージが製造できるので、包装工程での作業が早く、簡単になり製造口  
スが減少できます。

### その他

コラーゲンケーシングは自然な匂いで、箱から出してからすぐに使用できます。面倒な準備  
(水戻しや束をほぐす作業)は必要ありません。価格や供給は安定しており、季節による変動  
もないので、コスト予測が容易です。コラーゲンケーシングを使用したソーセージはどんな調  
理にも使用でき、天然腸のソーセージと比べて遜色のない見栄えです。

(First issued at IFFA, 2007)

### Safety of Collagen

All CCTA members source their collagen raw material for casings from animal hides only. This  
is predominantly bovine hide, although some porcine hide is also used.

Concerns about the risk to human health prompted by the issue of BSE in cattle have seen a  
proliferation of worldwide legislation. The subsequent risk management imposed has been  
extremely effective in reducing the global incidence of BSE.

In addition to this, independent scientific research and analysis have resulted in bovine skin collagen being listed as a tissue free of BSE agent. Supporting documentation can be found as follows:

1. The Opinion And Report On Safety With Respect To TSE Risks Of Collagen Produced From Ruminant Hides was adopted by the European Commission Scientific Steering Committee at its meeting of 10-11 May 2001. This report concluded that *"on the basis of current knowledge it can be considered that the parts of ruminant hides used for the production of collagen do not present a risk with regard to TSE's - - - -"*
2. The OIE (Office International des Epizooties - World Veterinary Organisation for Animal Health) have a chapter on BSE in their International Health Code. It states that *"when authorising import or transit of the following commodities and any products made from these commodities and containing no other tissue from cattle, Veterinary Administration should not require any BSE related conditions, regardless of the BSE risk status of the cattle population of the exporting country, zone or compartment - - - (c) hides and skins - - - (d) collagen prepared exclusively from hides and skins"*.
3. A report of a WHO (World Health Organisation) consultation on medicinal and other products in relation to human and animal Transmissible Spongiform Encephalopathies, commissioned to categorise infectivity in bovine tissues, placed bovine skin collagen into "Category IV" with "no detectable infectivity".[WHO/EMC/ZOO/97.3]

4. An Opinion Of The Scientific Panel On Biological Hazards Of The European Food Safety Authority (EFSA) On The BSE Risk From Cohort Animals: Bovine Hides And Skins For Technical Purposes, adopted on 18 May 2006, confirmed that "so far infectivity has never been found in cattle hides".

These reports establish that bovine skin collagen used for the manufacture of edible collagen casings is intrinsically safe, irrespective of the BSE status of the animal.

In addition to this:

- All countries in which CCTA members manufacture have appropriate measures in place to ensure that diseased cattle do not enter the food chain.
- The manufacturing process for collagen casings incorporates processing steps which would destroy any BSE infection, even if it were present.
- Pork collagen does not suffer from BSE.

It is therefore safe to conclude that there is no food risk from collagen casings.

## Literature

*What is Collagen?* – [Download](#)

*Benefits of Collagen Casings* – [Download](#)

*Safety of Collagen* – [Download](#)

## Links

## Regulations

## EU Legislation

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:139:0055:0205:EN:PDF>

## UK Regulations

<http://www.defra.gov.uk/>

## Australian Regulations

<http://www.daff.gov.au/aqis>

## Associations

### UK Food and Drink Federation

<http://www.fdf.org.uk/home.aspx?notfound=>

### American Association of Meat Processors

<http://www.aamp.com/>

### American Meat Institute

<http://www.meatami.com/>

### US National Meat Association

<http://nmaonline.org/>

## Government agencies

UK Food Standards Agency

<http://www.food.gov.uk/>

US Department of Agriculture

<http://www.usda.gov/wps/portal/usda/usdahome>



## ソーセージ

通常ソーセージは肉に脂、塩、スパイスなどを混ぜ合わせたものをケーシングに充填して作ります。以前は動物の腸が使用されていましたが、現在ではコラーゲンやプラスチック製のケーシングも多く使われています。

ソーセージには加熱調理した後でケーシングを剥く「皮なしソーセージ」というタイプのももあります。ソーセージを製造する際の塩せきや乾燥、スモークなどの工程には保存効果があります。

ソーセージは食肉を無駄なく利用するという考えで生み出されました。動物の部位には、食用で栄養があるけれど、見た目が悪く、使い道がないために安価な部分があり、これらを肉と混ぜあわせて製造しました。こうしてソーセージは、最古の加工食品の一つになりました。

近年では、ソーセージは良質の肉で作られ、種類も豊富です。

## ソーセージの種類

CCTA加盟各社はいろいろなタイプのソーセージの製造に適したケーシングを提供します。

**生ソーセージ**- ブレックファストソーセージ、ディナーソーセージ

**細いスモークソーセージ**- ウィンナーソーセージ、フランクフルトソーセージ

**ブラートブルスト**-夏場に多く食される加熱加工したソーセージ

**ビーフスティック** - おやつ、おつまみ用の細いサラミ

**ドライソーセージ**- ミニサラミ、ランドイェーガー、チョリソー、香腸など

**太いスモークソーセージ**-主に豚肉を使用した太いソーセージ

**クックドソーセージ**-加熱加工したソーセージ

代表的な料理方法については 当サイトの [recipes page](#) へ

## Recipes

There are hundreds of different sausage recipes available on the internet. Here are just a couple of examples.

### BBQ Beef Sausage

#### Ingredients

**75% Beef trim**

**4% Rice flour**

**1.45% Potato starch**

**1.8% Salt**

**0.25% Sodium tripolyphosphate**

**0.1% Each of white pepper, paprika**

**0.05% Nutmeg**

**17.25% Water**

### Method

1. Mince meat through a 13mm plate
2. Mix all ingredients together
3. Mince mixture through a 5mm plate
4. Fill into fresh collagen sausage casing

### BBQ Beef Sausage with herbs

#### Ingredients

- 75% Beef trim
- 4% Rice flour
- 1.45% Potato starch
- 1.8% Salt
- 0,25% Sodium tripolyphosphate
- 0.2% Each of white pepper, thyme, nutmeg
- 0.1% Sage
- 16.8% Water

### Method

1. Mince meat through a 13mm plate
2. Mix all ingredients together
3. Mince mixture through a 5mm plate
4. Fill into fresh collagen sausage casing

## Sausage Varieties

The sausage is a staple food product in almost every country in the world but varies hugely in style, type and application. It can be a gourmet delight, or a cheap but nutritious meal, a breakfast, lunch or dinner, or a quick snack, it can be eaten hot or cold, sliced or whole, fried, grilled, baked, boiled or steamed. The variety is virtually endless.

The casing is an integral part of the sausage and contributes hugely to the sausage's overall appeal. Collagen casings have for over 50 years provided the ideal casing for sausage with the ideal combination of cost effectiveness and consumer appeal.

There are four principle types of sausage where the skin is eaten with the sausage:

**Fresh sausages** - such as the South African Boerewors, American Breakfast link or British Banger. A blend of meat, spices sometimes with a cereal based filler which helps the sausage keep its shape and keeps the overall price down.

**Cooked sausages** - which have been cooked by the producer and can be eaten hot or cold. German bratwurst, or the more universal Liver sausage are prime examples.

**Smoked sausages** - where the traditional preservation method of smoking has added flavour and colour to the product. Wieners, Bockwurst, Frankfurters are known by virtually everyone in the world in one form or another.

**Dried sausages** - where the meat has been cured, fermented and dried. Here you can try Chinese Lapcheung, American beef sticks or the rectangular shaped Landjaegar.

There are thousands of different sausages to try sold loose, tied into bundles, in jars, cans, fresh or frozen. Wherever you go in the world there is a different and tasty sausage to try.

## Contact Us

### Contact Details

For more information and general enquiries, please [e-mail us](#) or contact one of our members at their websites.

### Members Websites

Devro

<http://www.devro.com>

Fabios

<http://www.fabios.com.pl/>

Fibran

<http://www.fibran.net>

Nippi, Inc.

<http://www.nippi-inc.co.jp/tabid/161/Default.aspx>

Nitta Casing

<http://www.nittacasings.com/>

Viscofan

<http://www.viscofan.com>

