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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

“Bone Gelatine” In Light of The Shari’ah

At a Halaal conference hosted in Turkey several years ago, some scholars discussed the Shari’ah ruling of gelatine. Some were of the opinion that the gelatine derived from Halaal animals would be Halaal and, if derived from Haraam animals, it would be Haraam. Others were of the view that, since there is a complete metamorphosis of the Haraam that takes place during the process of deriving the gelatine, it would neither be conditional for the animal to be Halaal nor for the animal to be slaughtered in the manner prescribed by the Shari’ah for Halaal slaughter. Hence, the proponents of the latter view deemed the use of such gelatine permissible according The Shari’ah.

Those Fatawa which I have read on the topic have a common factor: If a complete metamorphosis of the Haraam takes place, it will be permissible to use the gelatine. If not, it will be permissible to use the gelatine derived from Halaal means and it will not be permissible to use gelatine derived from Haraam means.

I consider myself very fortunate in that Allah ﷻ has blessed me with knowledge of His Deen and, together with that, used me for the service of Halaal and Haraam. Hence, considering it my twofold responsibility, I started researching this topic and,

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upon returning from my journey, requested a gelatine production plant to guide me in this regard so that the Ummah at large could benefit from my research. May Allah ﷻ reward them for acceding to my request and for giving me a tour of their factory during one of my visits to Lahore.

First of all, I got to meet the Head of their Research and Development Department who verbally explained the entire process to me. There was a lot of technical jargon which made it very difficult for a first timer to understand. Nevertheless, when one's intention is good, Allah ﷻ makes everything easy! I understood approximately 50% of what he had said and asked him to explain the rest in simple terms.

The simple question I asked was: *"Does a complete metamorphosis take place during the process or not?"* His answer was just as simple: *"No! We merely remove a special part of the bone with the utmost care."*

Thereafter, Mufti Ahsan Zafar and I went on a complete tour of the plant, saw every process step by step, asked one question after the other and collected the answers.

May Allah ﷻ accept this effort and make it a means of guiding the Ummah.

Yousuf 'Abdur-Razzaaq

Jumu'ah, 19 Muharram, 1438
Friday, 21 October, 2016

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Definition

Gelatine is the name of a protein which is obtained from the bones and skin of animals. It is also referred to as a “Gelling Agent” because its purpose is to keep the components of bone together. It resembles a thick, jelly-like substance and can also be derived from fish.

It can be spelled in two different ways in English: Gelatin and Gelatine – in other words, a thick, jelly-like substance.

Note: Pectin is derived from fruit and is a substitute for Gelatine. Hence, it would be incorrect to refer to it as Gelatine as well.

The Use of Gelatine

As was mentioned in the definition above, Gelatine is a thick, jelly-like substance derived from the skin and bones of animals. Hence, it is predominantly used as a thickener in food and beverages. In subcontinental society, bone broth soup is considered to be tastiest when it is thick, and this thickness comes from slow-cooking the bones over a low heat for a very long period of time. In other words, by slow-cooking the broth over a low heat for a protracted period of time, more of the Gelatine inside the bones mixes with the soup, causing it to thicken.

Gelatine as a Clarifying Agent

Gelatine is used as a filter to clean or clarify fruit juices such as apple juice.

Gelatine as a Stabiliser

Gelatine is added to yoghurts to prevent the whey within it from seeping out.

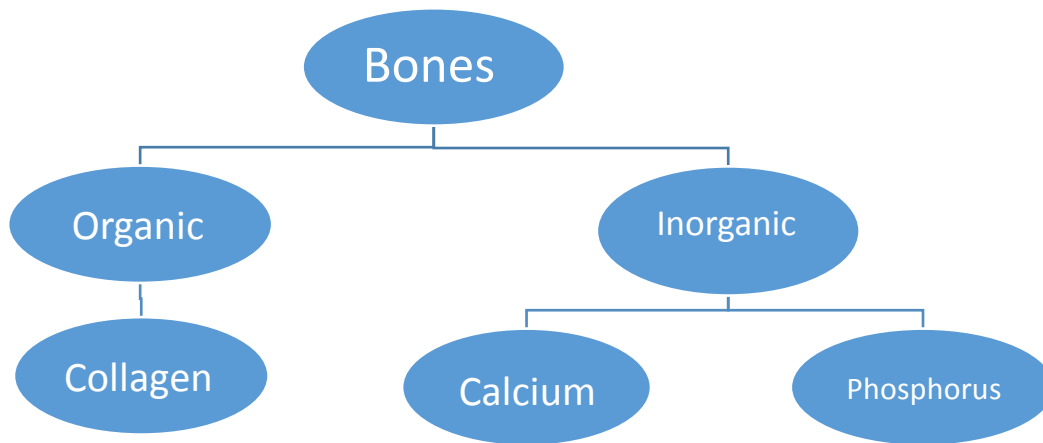
Gelatine is commonly used in the following food products:

Marsh mallows, jelly, chocolates, toffies, chewing gum, cakes, ice cream, Nihari¹ spices, yoghurt, capsules, bone-strengthening medicines etc.

Thus far, we have given a brief introduction and summary. Now we will go into a more detailed discussion. However, before we start, it is important to understand what bone itself consists of as this is a fundamental point that makes it easy to solve the entire conundrum.

Bone Matter

In short, bones consist of a number of elements. The experts divide this into two categories: Organic and Inorganic. The organic part consists mainly of Collagen which is separated from the bone. Phosphorus and Calcium are derived from the inorganic part of the bone and these are used in the production of animal feeds.



¹ A traditional Subcontinent dish.

Note: Collagen serves to keep all the constituent elements of the bones together. Think of it as the Gypsum in cement, which strengthens and binds the remaining ingredients of the cement.

How to produce Gelatine

During the Gelatine production process, all the skill and effort goes into separating the various constituent elements within the bone without harming the very element – Collagen – that has kept them all together. This is indeed a very difficult task. It is like taking a cement brick and separating the Gypsum from within it in such a way that all the other constituents also separate without causing damage to the Gypsum itself.

The method of producing Gelatine is more or less as follows:

1. First of all, the bones are cut into pieces, approximately 2 inches long.
2. Thereafter it is placed into a spinning basket and cleaned until no dirt or sand remains.
3. Then, the bones are transferred to a drum where it is soaked in Caustic Soda for 1 ½ to 2 days to clean it even further.
 - a. The Caustic Soda only serves to remove any oiliness or grease from the bones so that pure, clean bones can be used for the following process.
4. Thereafter, the bones are soaked in a Hydrochloric Acid solution for 4 to 5 days, according to necessity.
 - a. The bones are soaked in a Hydrochloric Acid solution as this aids in killing germs and removing the inorganic elements.
 - b. At this juncture, the inorganic constituents – Calcium and Phosphorus – are removed from the bones.
5. From there, the bones are placed into pools of Lime suspension where it remains for approximately 70 days. This process causes removing of non-

collagen organic constituents to separate and pure Collagen emerges in solid form. During this part of the process, the water is replaced periodically.

- a. Phosphoric Acid is added to the process at this point so that the acidity level of the bones (which has risen to 13 due to the Lime suspension) may return to normal.
6. Thereafter, the organic substance – Collagen – is transferred to special pools where hot water is continuously poured over it in order to dissolve it properly without any part of it evaporating or going to waste. Consequently, the solid Collagen completely dissolves in water and the resultant solution resembles soup.
7. It is then pumped into another pool. At this point, the solution contains 90% water and 10% dissolved Collagen. The water is then evaporated until only 40% of the water remains.
8. The solution is then pumped through a filter for a second time so that no other suspended particles, besides Collagen, remains. At the same time, more water is evaporated so as to further reduce the water content. As more of the water evaporates, the solution becomes thicker.
9. The solution is then pumped through a chiller to convert into Sami solid material and Gelatine emerges in the form of noodles.
10. These noodles are then placed on a conveyer belt for approximately 120 minutes, during which time the remaining water content is evaporated from the noodles.
11. After crushing the dry Gelatine, it is ground into powder according to the sizes needed, and filled into containers.

Note: Collagen and Gelatine refer to two different forms (stages) of a single substance that comes from one origin. The original substance that emerged from the bones was called Collagen. This substance was dissolved in a substantial amount of water, but was still referred to as Collagen. Once the entire process had been completed and the solution had passed through a filter, the noodles which emerged from the other side were referred to as Gelatine. One can equate this to

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solid fat which, once melted, is referred to as oil. It is simply two different names for the same (original) substance.

Conclusion

After seeing and hearing all the details mentioned above, I have come to the conclusion that Gelatine is an important component of the bone itself which is merely separated from the bone in a very innovative way. This separation process is technically referred to as “extraction.” It is the very same process which is used to first extract the juice from sugarcane, after which the liquid content is evaporated to produce solid jaggery². Thereafter, only the glucose is removed from the jaggery to produce sugar.

Hence, the question of metamorphosis does not even arise. Yes, some may argue that sugar does go through a metamorphosis – from sugarcane to sugar (which certainly did not happen) – but that is another story.

In conclusion, when Gelatine is derived from an animal, it is a precondition for the animal to be Halaal and for it to be slaughtered in the manner prescribed by The Shari’ah. If any other means or process is used, the Gelatine will not be Halaal.

And Allah ﷻ knows best.

Written by:

Mufti Yusuf ‘Abdur-Razzaq

² Called گڑھ in Urdu.

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