

**National Organic Standards Board**  
**Handling Subcommittee Petitioned Material Discussion Document**  
**Collagen Gel**  
**August 6, 2018**

[Summary of Petition](#)

A petition has been submitted by Devro, Inc. to add collagen gel in Section 7 CFR 205.606, Nonorganically produced agricultural products allowed as ingredients in or on processed products labeled as “organic.” The USDA organic regulations define an agricultural product as “any agricultural commodity or product, whether raw or processed, including any commodity or product derived from livestock...”.

The manufacturing process of collagen gel is described in the Devro, Inc’s petition: Collagen gels are derived from the corium layer of skins from cows, pigs, chickens and/ or turkeys. Skins are washed and treated with acetic acid, lactic acid, or hydrochloric acid to adjust pH in preparation for further production into collagen gel. Washed and treated skins are physically sieved through a two stage particle size reduction, resulting in a collagen pulp. Water is added and the pH reduced which causes the collagen to absorb water; the blend is physically agitated to produce a collagen gel which is physically worked and filtered to produce a fine gel. The finished collagen gel is packaged and stored in cold storage.

Cellulose powder, derived from plant sources, is an ancillary substance in collagen gel. Cellulose adds permeability to the sausage’s skin, allowing for the release of the meat emulsion’s oil and fats during the sausage’s cooking process. In finished collagen gel, cellulose is present in the range of 2 – 5%, depending on targeted product characteristics.

Collagen gel can be used in sausage production using a co-extrusion system. Typical products produced using this ingredient include cooked and smoked sausages. In these co-extrusion systems, collagen gel enrobes the sausage meat like a casing as the meat is extruded and holds the form of the meat product. The collagen gel is considered an ingredient in the finished product. Current organic options (casings, from processed intestines) will not function in this type of co-extrusion sausage production. Collagen, in the form of pork collagen appears on the FDA’s “GRAS Notice Inventory,” at GRN No. 21, with an intended use “in meat products as a binder and purge reducing agent at levels of 1.0 to 3.5 percent.”

According to the petition, collagen is a naturally occurring structural protein made up of essential amino acids and is present in all living organisms. It has no known toxicities and breaks down into its constituent amino acids on digestion. It has no environmental persistence and use of collagen is unlikely to have any adverse impact on the environment. Collagen is harvested from the skins of edible species of commercially harvested livestock processed at USDA inspected facilities following all pertinent regulations. It is a co-product of the animal production industry, thereby providing a raw material that otherwise has less value.

Although collagen is used directly in the food industry, it is more widely used in its denatured form, as gelatin. Collagen is the native form of gelatin and chemically the two are indistinguishable. The two forms of this single protein are only separated by their physical structure; collagen retains the natural triple helical structure that defines it in nature. As gelatin, collagen is widely used in the food industry.

Besides its direct consumption as a natural meat component, purified collagen has also been used for decades in the manufacture of sausages. Gelatin is currently listed under §205.606: Nonorganically produced agricultural products allowed as ingredients in or on processed products labeled as “organic.”

### **Summary of Review:**

In May of 2018 the Handling Subcommittee found the petition for collagen gel to be sufficient. A request for a technical report was submitted by the Subcommittee to the NOP. At this time, the technical report is under development. This petitioned material discussion document is being put forward with the intent of gathering public comment and allowing for discussion by the full board at the Fall 2018 NOSB meeting.

### **Questions:**

1. Are there organic sources of collagen gel (e.g., from skins of organically raised livestock) that preclude listing as a non-organically produced agricultural product allowed as ingredients in or on processed products labeled as “organic?”
2. Is there demand or need for this material in the market place?
3. Are acids other than acetic acid, lactic acid, or hydrochloric acid used in the production of collagen gel? Are food-grade acids used for the production of collagen gel?
4. Are there uses of this material other than for manufacturing meat products (such as an ingredient in joint health products, bone broth concentrate, or other foods or supplements, etc.)? What are they?

Motion to accept the discussion document on collagen gel (casing)

Motion by: Asa Bradman

Seconded by: Scott Rice

Yes: 7 No: 0 Abstain: 0 Absent: 0 Recuse: 0

**Approved by Lisa de Lima, Subcommittee Chair, to transmit to NOSB, August 24, 2018**