

factor for consumer acceptability in organic food consumption, **compared to those that contain other hydrocolloids**. For example, thickened and sweetened non-fat dairy beverages with CGN were creamier and smoother than similar beverages containing minimal dairy fat (Flett et al. 2010). Moreover, addition of CGN in low-calorie chocolate-flavored milk drink resulted in better release of flavor compared to sodium alginate (Yanes et al. 2002). The use of CGN in chocolate-flavored soymilk prevented the production of off-flavor, while sodium alginate, xanthan gum, and LBG bring out an undesirable “beany” flavor in similar products (Wang et al. 2001). CGN allows whipped dairy cream to demonstrate exceptional consistency (hence, palatability and appearance) even when exposed to repeated freezing and thawing (Camacho et al. 1998; 2001). Outstanding gastronomic properties of processed meat and fish products are enhanced with the addition of CGN. For instance, low-fat processed meat products with CGN are juicier, more tender, and have better color and flavor (Ulu 2006; Solheim and Ellekjær 1993; Xiong et al. 1999; Huffman and Egbert 1990). On the other hand, guar and xanthan gums yield off-odor, producing sausages that are less firm and elastic than ordinary sausages (Xiong et al. 1999). Konjac, on the other hand, causes a strong off-odor and an increase in undesirable yellow hue in surimi gels (Park et al. 2014; Park 1996; Xiong et al. 2009; Liu et al. 2013).

The above-cited glaring differences in performance and range of applications, in favor of the use of carrageenan, guarantees product shelf-life, superior product presentation, and consistency, while ensuring overall positive impact on consumer acceptance. The arguments presented here emphasize that there is **no suitable alternative to carrageenan in its current product applications**.

THE ACTION

In April 2018, after much deliberation, the US Department of Agriculture, in the conclusion of its 2018 Sunset Review, decided to keep carrageenan on the National List of Allowed Substances under

the US Organic Foods Production Act despite the recommendation by the National Organic Standards Board (NOSB) in 2016 to remove it from the list. In a statement published in the Federal Register (Vol. 83, No. 65), the USDA says it *“found sufficient evidence in public comments to the NOSB that carrageenan continues to be necessary for handling agricultural products because of the unavailability of wholly natural substitutes (§ 65171(1)(ii)). Carrageenan has specific uses in an array of agricultural products, and public comments reported that potential substitutes do not adequately replicate the functions of carrageenan across the broad scope of use. Therefore, carrageenan continues to meet the OFPA criteria for inclusion on the National List.”*

CONCLUSION

As the country celebrates the victory of carrageenan’s renewal among the “allowed substances” in the National List of the USDA National Organic Program, there is a need for continued vigilance among stakeholders as certain groups continue to lobby against carrageenan. Another sunset review is set for May 2023 and it is likely that the call for public comments to review the status of carrageenan is in the year 2021. There is wisdom in the call to action of Bixler (2017) for the carrageenan industry to be more proactive and skillful in getting the message out about carrageenan’s safety and benefits to its consumers rather than continuing to “reduce the noise in the public domain” about the controversies surrounding carrageenan. As delineated in this paper, there is much scientific evidence on carrageenan’s safety and superior performance in its current product applications that cannot be fully replicated by purported alternatives.

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