Pierrat, J., J.-F. Hamel, J. Sun, R. Morrison & A. Mercier 2025. Spatial and organ-specific variations in the appearance and nutritional properties of the sea cucumber *Cucumaria frondosa* in support of emerging fisheries initiatives in the Canadian Arctic. *Arctic Science*, 11: 1–18.
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This study assessed spatial variations in the colour and nutritional profile of the sea cucumber *Cucumaria frondosa* in Qikiqtait (Nunavut), as well as variations among body parts (stomach, muscles, ovaries and testes). Sea cucumbers were smaller at Kataapik and had a heterogeneous colour while the larger sea cucumbers from Ivittuuq and Kataaluk were homogenous. Sea cucumbers from Ivittuuq had the lowest lipid content, with lower levels of saturated fatty acids (considered harmful to human health) and higher levels of polyunsaturated fatty acids (considered beneficial to human health). They also had higher concentrations of amino acids (some of which are considered essential because they are not produced by humans and must be obtained from the diet). Ivittuuq appears to be an optimal site (among those studied) for the development of small-scale commercial fisheries, as it offers the best balance between customer expectations (large individuals with a uniform colour), an interesting nutritional profile for human consumption and ease of access (shallower than outside of the channel of Kataaluk). Variations of the nutritional profile between the different body parts studied have also been highlighted, suggesting that traded product itself (different organs) could be tailored to target pharmaceutical, nutraceutical or food markets.

ᑖᓐᓇ ᖃᐅᔨᓴᕐᓂᖅ ᖃᐅᔨᓴᕈᑕᐅᓚᐅᖅᑐᖅ ᐊᑦᔨᒌᙱᓂᖏᓐᓂᑦ ᑕᖅᓴᖏᑦ ᐊᒻᒪᓗ ᓂᕿᑦᓯᐊᕙᐅᓂᖏᑦ ᖂᖅᓯᕚᑦ *Cucumaria frondosa* ᐊᑦᔨᒌᙱᑐᓂ ᐃᓂᓂ ᕿᑭᖅᑕᓂ (ᓄᓇᕗᒻᒥ), ᐊᒻᒪᓗᑦᑕᐅᖅ ᐊᑦᔨᒌᙱᓐᓂᖏᓐᓂᑦ ᑎᒥᖏᑕ ᑭᓱᑯᑦᓯᖏᑦ (ᐊᕿᐊᕈᖏᑦ, ᓄᑭᖏᑦ, ᒪᓐᓂᖃᐅᑎᖏᑦ, ᐊᒻᒪᓗ ᐃᑦᔪᖏᑦ). ᖂᖅᓯᕚᑦ ᑲᑕᐱᒥᑦ ᒥᑭᓂᖅᓴᐅᓚᐅᖅᐳᑦ ᐊᒻᒪᓗ ᐊᑦᔨᒌᙱᑦᑑᑎᓂᑦ ᑕᖅᓴᖃᖅᓯᑎᒃ, ᐊᖏᓂᖅᓴᐃᑦ ᖂᖅᓯᕚᑦ ᐃᕕᑦᑑᕐᒥ ᐊᒻᒪᓗ ᑲᑕᓗᒥ ᐊᑦᔨᒌᓂᑦ ᑕᖅᓴᖃᖅᓯᑎᒃ. ᖂᖅᓯᕚᑦ ᐃᕕᑦᑑᒦᑦᑐᑦ ᒥᑭᓂᖅᐹᒥᑦ ᐅᖅᓱᖃᓚᐅᖅᐳᑦ, ᐅᖅᓱᖃᙱᓐᓂᖅᓴᐅᓗᑎᒃ (ᐊᑦᑕᓇᕐᓂᕋᖅᑕᐅᓗᑎᒃ ᐃᓄᐃᑦ ᖃᓄᐃᙱᓯᐊᕈᓯᖏᓐᓄᑦ) ᐅᓄᖅᓯᕖᓪᓕᓯᒪᓗᑎᓪᓗ ᐅᖅᓱᖃᓗᐊᙱᑐᑦ (ᐃᑲᔫᓯᒪᓂᕈᖅᑕᖁᓗᑎᒃ ᐃᓄᐃᑦ ᖃᓄᐃᙱᑦᓯᐊᕈᓯᖏᓐᓄᑦ). ᐃᓗᓕᖃᓚᐅᕆᕗᑦ ᐊᖏᓂᖅᓴᓂᑦamino acids-ᓂᒃ (ᐃᓚᖏᑦ ᐱᔭᕆᐊᖃᓪᓚᕆᑐᑦ ᐃᒪᐃᒻᒪᑦ ᓴᓇᔭᐅᔪᓐᓇᙱᓐᓂᖏᓐᓄᑦ ᐃᓅᑉ ᑎᒥᖓᓄᑦ ᓂᕆᔭᐅᒋᐊᖃᖅᐸᓗᑎᓪᓗ ᓂᕆᕙᑦᑕᒃᑯᑦ). ᐱᐅᔪᐊᓗᒻᒥᑦ ᐃᓂᐅᔪᖅ (ᑕᐃᒃᑯᓇᙵᑦ ᖃᐅᔨᓴᖅᑕᐅᔪᓂᑦ) ᐱᕙᓪᓕᐊᑎᑦᓯᓂᕐᒧᑦ ᒥᑭᔪᓄᑦ ᑮᓇᐅᔭᓕᐅᕆᓯᐊᕐᓂᒧᑦ ᐆᒪᔪᕆᓯᐊᕐᓂᒧᑦ ᐃᒪᐃᒻᒪᑦ ᐱᑎᑦᓯᖕᒪᑦ ᐱᐅᔪᒥᑦ ᓇᓕᒧᒌᖅᑎᓯᓂᕐᒥᑦ ᓂᐅᕕᖅᐸᑐᑦ ᓂᕆᐅᒋᔭᖏᓐᓂᒃ (ᐊᖏᔪᐃᑦ ᖂᖅᓯᕚᑦᑦ ᐊᑦᔨᒌᑦᑐᓂᑦ ᑕᖅᓵᓛᑦ), ᐱᔪᒥᓇᖅᑐᑦ ᓂᕿᑦᓯᐊᕙᐃᑦ ᖃᓄᐃᓕᖓᓂᖏᑦ ᐃᓄᖕᓄᑦ ᓂᕆᔭᑦᓴᐃᑦ, ᐊᑐᐃᓐᓇᓯᐊᒍᑦᓯᑎᓪᓗ (ᐃᒃᑲᓂᖅᓴᖅ ᐃᓂᓂᑦ ᓯᓚᑖᓂ ᑲᑕᓗᑉ ᑕᓇᐅᖕᒐᓂ). ᐊᑦᔨᒌᙱᓂᖏᑦ ᓂᕿᑦᓯᐊᕙᐃᑦ ᖃᓄᐃᑦᑑᓂᖏᑦ ᐊᑦᔨᒌᙱᑐᓄᑦ ᑎᒥᐅᑉ ᐃᓚᖏᓐᓄᑦ ᖃᐅᔨᓴᖅᑕᐅᔪᓄᑦ ᐅᖃᐅᓯᐅᓚᐅᕆᕗᑦ, ᓇᓗᓇᐃᖅᓯᓗᑎᒃ ᓂᐅᕕᐊᑦᓴᐃᑦ ᑕᐅᖅᓲᑕᐅᔪᑦ (ᐊᑦᔨᒌᙱᑦᑐᑦ ᑎᒥᐅᑉ ᐃᓗᓕᖏᑦ) ᐋᖅᑭᓱᖅᑕᐅᔭᓐᓇᓂᖏᓐᓂᑦ ᐃᒐᖅᑖᕙᓐᓄᑦ, ᓂᕿᑦᓯᐊᕙᓐᓄᑦ, ᐅᕝᕙᓘᓐᓃᑦ ᓂᕿᓄᑦ ᓂᐅᕕᐊᑦᓴᐅᕙᑦᑐᓄᑦ.