The growth and leaf morphology of *Sargassum miyabei* were measured at four salinities (3, 7, 15 and 30) in outdoor tanks. The plant was collected in Aso Lagoon, Kyoto Prefecture. The length of plant and number of leaves were highest at 30. Most plants produced sinuate leaves at 3, serrate at 7, oblong at 15, and linear at 30. In our outdoor tanks, a strong correlation was observed between leaf complexity and leaf area at different salinity conditions.

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