

【問題用紙】

令和8年度 愛媛大学大学院農学研究科入学者選抜学力検査

(生命機能学専攻 応用生命化学コース)

外国語

第 1 頁 ( 3 頁の内)

問 1～3 すべてに答えよ。解答は解答用紙に記入し、紙面が不足する場合は裏面を使用しても良い。その場合は「裏面に続く」と特記すること。

問 1. 次の文章を和訳せよ。

Ethanol is currently the most important global biofuel, a term indicating that the fuel was made from the fermentation of recently grown plant material rather than being of ancient origin. Other major biofuels include biodiesel, made from vegetable oils, and algal fuels, alcohols, and oils produced from green algae. The feedstock used for ethanol production has been a major issue in the debate over whether biofuels are the wave of the future. In the United States, for example, the increased demand for corn as a biofuel feedstock has driven up the price of human foods and livestock feeds. In other countries, for example Brazil, which is a major ethanol producer, not only corn but also sugar cane, whey, sugar beets, and even wood chips and wastepaper are used as feedstock for the fermentation.

出典 : Brock Biology of Microorganisms, by Michael T. Madigan, Pearson

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第 2 頁 ( 3 頁の内)

問 2. 次の英文は温暖化によって珊瑚が死滅する問題に対し、熱耐性を持つ種を探索する研究に関する序文である。和訳せよ。

Marine heatwaves are becoming more frequent, widespread and severe, causing mass coral bleaching and mortality.

Natural adaptation may be insufficient to keep pace with climate warming, leading to calls for selective breeding interventions to enhance the ability of corals to survive such heatwaves, i.e., their heat tolerance.

However, the heritability of this trait—a prerequisite for such approaches—remains unknown.

We show that selecting parent colonies for high rather than low heat tolerance increased the tolerance of adult offspring (3–4-year-olds).

(訳注) heatwaves: 熱波、bleaching: 白化、mortality: 死亡率、interventions: 介入、heritability: 遺伝率、trait: 形質、prerequisite: 前提条件、adult offspring: 成体の子孫

出典: Nature Communications 15, 8703, 2024 より一部改変

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第 3 頁 ( 3 頁の内)

問3. 次の文章を和訳せよ。

The cells I started to work with in the 1970s were yeast cells, which most people think are only good for making wine, beer or bread, not for tackling fundamental biological problems. But they are, in fact, a great model for understanding how cells of more complex organisms work. Yeast is a fungus, but its cells are surprisingly similar to plant and animal cells. They are also small, relatively simple, and grow quickly and inexpensively when fed on simple nutrients. In the lab we grow them either floating freely in a liquid broth or on top of a layer of jelly in a plastic Petri dish, where they form cream-coloured colonies a few millimetres across, each containing many millions of cells. Despite, or more accurately, because of their simplicity, yeast cells have helped us to understand how cells divide in most living organisms, including human cells. Quite a lot of what we know about the uncontrolled cell divisions of cancer cells came first from studying the humble yeasts.

出典 : Paul Nurse, “*What is Life?*”