IOWN INTEGRAL

NTT R&D FORUM 2024

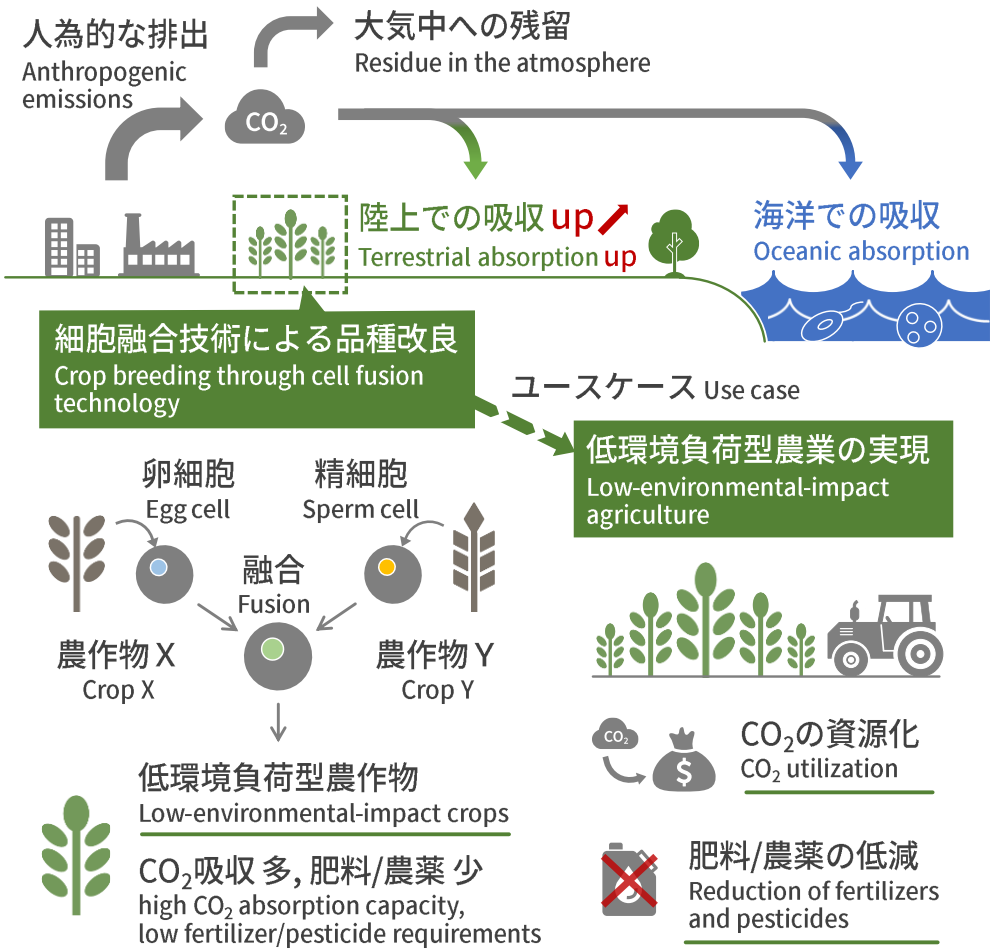
RESEARCH

γ07-06

Crop breeding technologies for achieving low environmental impact agriculture

Agricultural practitioners lower their environmental footprint while enhancing their profitability

#Green Transformation



///Technical Issue

Although improving crops' CO_2 absorption and reducing their fertilizer and pesticide needs are necessary, suitable breeding technologies are not yet established.

///Research Goal

We aim to reduce environmental impact and enhance profitability by developing crops with high carbon fixation and no need for pesticides or fertilizers.

---Technology

A novel technology for egg and sperm cell fusion enables the efficient and multifaceted enhancement of plant functions that contribute to low environmental impact.

---Novelty

We aim to establish the world's first fusion technology for crop egg and sperm cells, enabling multifaceted enhance-ments like improved CO_2 absorption and reduced fertiliz-er and pesticide requirements previously unattainable with conventional breeding.

---Applicable Business

Applying the developed technology to the use case of reducing pesticide and chemical fertilizer use in cereal crop production within the agriculture, forestry, and fisheries sector (around 2027) [Market size: ¥30 billion].

Exhibitors= NIPPON TELEGRAPH AND TELEPHONE CORPORATION Related URL=NTT Technical Review "CO2 Conversion and Emission-control technologies toward Carbon Neutrality" (2023)
Contact URL Outside Partner=Tokyo Metropolitan University