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## **C2Po1E-06 [30]: Numerical and experimental study on the cryogenic freezing process of the Golden Pomfret**

*Tuesday, July 23, 2019 9:00 AM (2 hours)*

Golden Pomfret is tender, delicious and rich in nutrition, but is also apt to deteriorate. Cryogenic quick freezing technology is applied to offer a fast freezing rate to maintain the quality of Golden Pomfret. The freezing rate depends on the freezing process temperature and gas flow rate in the cryogenic freezer. In order to achieve a sufficiently high freezing rate, numerical calculation was utilized to analyze the heat transfer principle of different Golden Pomfret freezing processes. Then the effects of different freezing rates on the freezing quality of the thawed Golden Pomfret were compared, such as K-value, TBA, volatile basic nitrogen, texture, high iron Myoglobin, color and total plate count. Finally, the best freezing process and corresponding freezing rate were obtained for maintenance of the quality of the Golden Pomfret.

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