

## 海洋农业

### 北方海区经济海胆性腺脂肪酸组成与 $\beta$ -胡萝卜素含量的比较研究

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#### 摘要:

海胆性腺中脂肪酸含量丰富, $\beta$ -胡萝卜素含量高,是一种营养价值较高的食物来源,不同种、不同群体间、不同性别海胆性腺中二者的组成与含量存在差异。对我国北方海区4种经济海胆(虾夷马粪海胆、光棘球海胆、马粪海胆和海刺猬)以及大连黑石礁、旅顺、獐子岛3个群体的光棘球海胆性腺中的脂肪酸组成及 $\beta$ -胡萝卜素含量进行了测量和分析。结果显示:不同种海胆、同种海胆的不同群体及不同性别海胆性腺中脂肪酸、 $\beta$ -胡萝卜素组成与含量均存在差异。不同种海胆间,光棘球海胆性腺中脂肪酸种类最多为31种,虾夷马粪海胆性腺中种类最少为24种;不同群体的光棘球海胆间,黑石礁群体性腺中脂肪酸种类最多为29种,旅顺群体最少为26种。雄性、雌性马粪海胆性腺中 $\beta$ -胡萝卜素含量均显著高于其他3种雌性海胆( $P<0.01$ )。3个群体的光棘球海胆性腺中,黑石礁群体雄性性腺 $\beta$ -胡萝卜素含量显著低于其他2个群体( $P<0.05$ ); 獐子岛群体雌性性腺中 $\beta$ -胡萝卜素高于其他2个群体,差异极显著( $P<0.01$ )。上述结果为进一步开展海胆杂交及海胆优良品种的选育奠定了基础。

**关键词:** 大连;海胆;性腺;脂肪酸; $\beta$ -胡萝卜素

### Comparative Studies on Urchin Gonad Fatty Acid Composition and $\beta$ -carotene Content in North China Sea Section

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#### Abstract:

Urchin gonad is a kind of nutritional and healthy food with abundant fatty acid and  $\beta$ -carotene, and their contents are different in different species and populations. We explored the fatty acid composition and  $\beta$ -carotene content of sea urchin gonad in 4 different species (*S.intermedius*, *S.nudus*, *H.pulcherrimus*, *G.renularis*) collected from Dalian and 3 populations of *S.nudus* collected from Heishijiao, Lüshun and Zhangzidao. The results showed that the fatty acid composition and  $\beta$ -carotene content of sea urchin gonad were different among the 4 species. The kinds of fatty acids in *S.nudus* were the largest with 31, while that of *S.intermedius* were the smallest with 24. Among the 3 populations of *S.nudus*, the kinds of fatty acids in Heishijiao were the largest with 29, while that of Lüshun were the smallest with 26. The  $\beta$ -carotene content of male and female urchin gonad in *H.pulcherrimus* were both significantly higher than the others ( $P<0.01$ ). Among the 3 populations of *S.nudus*, the  $\beta$ -carotene content of male urchin gonad in Heishijiao population was lower than the others ( $P<0.05$ ); while that of female gonad in Zhangzidao population was significantly higher than the others ( $P<0.01$ ). The above results set up a foundation for further hybridization and breed selection of sea urchin.

**Keywords:** Dalian urchin gonad fatty acid  $\beta$ -carotene

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