

## عنوان مقاله:

Effect of cryopreservation on lipid composition and antioxidant enzyme activity of seabass (*Lates calcarifer*) sperm

## محل انتشار:

مجله علوم شیلات ایران، دوره 15، شماره 1 (سال: 1394)

تعداد صفحات اصل مقاله: 13

## نویسندگان:

P Klaiwattana

K Srisook

E Srisook

V Vuthiphandchai

J Neumvonk

## خلاصه مقاله:

Cryopreservation of seabass (*Lates calcarifer*) semen is an approach to increase the quantity and quality of seabass fry in aquaculture. However, cold shock can induce sperm injury leading to structural damage of the plasma membrane and loss of motility. Thus, the effect of cryopreservation on fatty acid composition and antioxidant enzyme activities of seabass sperm was determined. In cryopreserved spermatozoa, the proportion of C16:0 was significantly increased ( $p=0.05$ ), while the proportion of C23:0, C22:6 n3, C22:5 n6, and C18:1n7t decreased significantly after freeze-thawing compared with that in fresh semen ( $p\leq 0.05$ ). The relative content of saturated fatty acids significantly increased ( $p<0.05$ ) but that of polyunsaturated fatty acids decreased ( $p=0.05$ ) in cryopreserved spermatozoa. Consequently, the ratio of unsaturated/saturated fatty acid was greatly decreased in frozen sperm ( $p<0.05$ ). Superoxide dismutase and glutathione peroxidase activities in frozen-thawed sperm increased significantly while activity of catalase did not differ at  $p>0.05$ . Malondialdehyde levels increased after cryopreservation compared to fresh semen ( $p=0.05$ ). These results indicated that an increase in superoxide dismutase and glutathione peroxidase activities in cryopreserved spermatozoa did not efficiently scavenge reactive oxygen species leading to an increase in lipid peroxidation, a reduction in polyunsaturated fatty acids and finally irreversible loss of sperm motility.

## کلمات کلیدی:

*Lates calcarifer*, Sperm, Cryopreservation, Fatty acid composition, Antioxidant enzymes

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1401845>

