

International Maritime Health
Attn: Editor-in-Chief, Dr. Maria Jeżewska

Bergen, 15.03.2021

SUBJECT: SUBMISSION OF MANUSCRIPT

Dear Editor-in-Chief

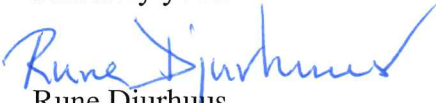
Please find enclosed a manuscript entitled "Fumigation on bulk cargo ships - a chemical threat to seafarers" by Rune Djurhuus. Your consideration of the manuscript for publication in **International Maritime health** will be highly appreciated.

At The Norwegian Centre for Maritime and Diving Medicine, we have for several years focused on the possible health effects of residual pesticides in both freight containers and bulk cargo ships. Recently, we completed a comprehensive report regarding health risks of fumigated freight containers, commissioned by the European Agency for Safety and Health at Work (EU-OSHA), see <https://osha.europa.eu/en/publications/handling-fumigated-containers-ports-health-risks-and-prevention-practices/view>. The report concluded that the fumigation problem seems to be underestimated, probably due to lack of documentation of incidents and lack of safe procedures for unloading containers based upon appropriate risk assessments.

The present paper is complementary to this report, addressing the potential health hazard of the fumigation process related to sea transport of bulk cargo. Fumigation of cargo on bulk ships are performed frequently and represent a potential health hazard to seafarers. Several intoxications including fatalities have occurred, but the number of incidents are probably underestimated due to lack of documentation. The present paper has collected information from both scientific and non-scientific sources and revealed a number of intoxications due to fumigation on bulk cargo ships. Phosphine seems to be exclusively used as pesticide in this context today, and recent evidence suggests long-term effects in addition to high acute toxicity. Several incidents point to lack of knowledge and neglect of recommended procedures as key elements of the adverse outcomes. The findings underscore that better documentation of incidents is required to reveal the extent of the problem and thus to demand preventive actions such as hazard identification, mandatory safety procedures and a system for reporting incidents.

I hope that the present paper will contribute to that all involved parties acknowledge the hazard and initiate remedial actions to decrease the risk of fumigated cargo to seafarers' health.

Sincerely yours


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