In recent years, there has been a significant increase in the quality of salt being produced in Bangladesh. The initial iodization level of salt was 30 ppm and retrieved at the end of every 3 months and tested. The average iodine loss (in percent) in all types of packaging material other than plastic oven bags is 14%. Iodine loss (and increase in moisture content) is lowest in vacuum evaporated salt. There was little variation in iodine loss across climatic zones. Policy Implications: Iodization standards at production level can be fixed at 30 ppm.

BACKGROUND

- In Bangladesh, salt law stipulates salt produced should have iodine content of 45-50 ppm at the production level, 20 ppm at retail level and 15 ppm at household level.
- Gap of iodine content between the production and consumer end is to allow for losses of iodine which take place in transit and storage from the production of salt to its consumption at the household.
- Iodine is lost in salt due to presence of impurities, moisture and other environmental conditions.
- In recent years, there has been a significant improvement in the quality of salt being produced in the country as well as the packaging material being used.
- These improvements have a significant bearing on iodine losses in transit and storage.
- There has also been a significant increase in the price of potassium iodate in the international & national markets which significantly increases the cost of iodization.

OBJECTIVE

- This study was undertaken to quantify the exact losses of iodine in the different types of salt in the typical environmental conditions in Bangladesh.
- To inform the policy on the optimal level of salt iodization which can ensure the recommended level of iodine intake by the population at the household level.

METHOD

- Four types of salt (vacuum evaporated, mechanical, traditional upgraded and traditional unrefined) iodized to a concentration of 30 ± 2 ppm.
- Each type of salt packed in four different types of packaging material (laminated, HDPE, LDPE and woven plastic bags) and stored in eight climatic zones in Bangladesh. The initial iodization level of salt was 30 ppm and retrieved at the end of every 3 months and tested.
- Results: The average iodine loss (in percent) in all types of packaging material other than plastic oven bags is 14%.
- Iodine loss (and increase in moisture content) is lowest in vacuum evaporated salt. There was little variation in iodine loss across climatic zones.

STANDARDS IN BANGLADESH

- The average iodine loss (in percent) in all types of packaging material other than plastic oven bags is 14%.
- Iodine loss is less in vacuum evaporated salt.
- Iodine loss is less in vacuum evaporated salt.
- The average iodine loss (in percent) in all types of packaging material other than plastic bags is 14% overall it is 30%.
- No significant correlation is not observed between presence of impurities and iodine loss.

POLICY IMPLICATIONS

- Increase in moisture content is the most important factor determining iodine loss.
- Packaging material is the most important factor influencing moisture gain and thereby iodine loss.
- Iodine loss (and increase in moisture content) is highest in plastic bags followed by LDPE, HDPE. It is lowest in laminated packaging.
- Variation in iodine loss is less across type of salt.
- The average iodine loss (in percent) in all types of packaging material other than plastic bags is 14% overall it is 30%.
- No significant correlation is not observed between presence of impurities and iodine loss.

STORAGE BY PACKAGING MATERIAL

- Salt iodization standards at production level can be fixed at 30 ppm as iodine has shown to be stable in environmental condition in Bangladesh.
- Plastic bags for storage and transport of salt should be banned as plastic bags does not offer protection against moisture and accelerates iodine decay below recommended levels.

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