

The Times of India- 17- November-2023

# DJB starts drive to cut froth, dirty riverbanks a challenge

TIMES NEWS NETWORK

**New Delhi:** Days before the Chhath Puja, the Delhi Jal Board (DJB) on Thursday started its anti-foaming drive at the Kalindi Kunj riverbank to reduce the froth on the surface of the Yamuna.

DJB vice-chairman Somnath Bharti also visited the spot near the Okhla Barrage to take stock of the arrangements. "DJB is using an absolutely safe chemical spray in its anti-frothing exercise at the Okhla Barrage. We have observed that there is no foam on the other side of the barrage, but the foam is generated here as the water is falling from a height," he said. DJB officials said the drive would be carried out till the end of the Chhath Puja on November 20.

The riverbank at the site is, however, extremely dirty, with horticulture waste, polybags, broken earthen utensils and muck lying all over the place. DJB officials claimed that cleaning the riverbank was the Municipal Corporation of Delhi's (MCD) duty, but it had not responded to repeated requests. "We have requested MCD several times in the past three days to clean the riverbank as many people are likely to come here in the next few days. But there has been no response," alleged a DJB official.

Mayor Shelly Oberoi had claimed that MCD had been carrying out cleanliness drives at the Chhath Puja ghats, but there was no reply from

Anindya Chattopadhyay



DJB officials said the drive will be carried out till November 20

## SOMNATH BHARTI SAYS

**DJB is using a safe chemical spray in its anti-frothing exercise at the Okhla Barrage. We have observed that there is no foam on the other side of the barrage, but the foam is generated here as the water is falling from a height**

her office on the queries regarding the cleaning of the riverbank at Kalindi Kunj.

According to DJB officials, the reason behind the froth is a combination of factors. While the elevation of the barrage is not smooth, the presence of phosphate in the water also adds to the problem, they said.

The satellite image that officials study reveals that the froth is spread around 780 meters in length and 365 meters in width, while the rest of the Yamuna is fine, they said.

An evident sign of pollution in the river; froth is formed in the absence of dissolved oxygen (DO) in a waterbody and largely due to untreated waste from drains and residues from detergent industries.

Referring to a dispute last year that raised safety concerns about anti-froth chemicals, DJB officials had said the de-foamer they used was from the polyoxypropylene group of chemicals, which had been approved by US Food and Drug Administration. A 'fish acute toxicity test' was also carried out to ensure that the chemical was absolutely safe for people, an official had said, adding that DO also increases in the river after its use.

Hindustan Times- 17- November-2023

# AAP says it will remove toxic foam in Yamuna, BJP hits out

Paras Singh

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**NEW DELHI:** The Delhi Jal Board (DJB) on Thursday began sprinkling defoamers in the Yamuna river at Okhla barrage to remove the toxic white foam floating on the water's surface — an issue that comes up every year — ahead of the Chhath Puja festival.

The festival will be celebrated from Friday (November 17) till November 20, during which devotees will offer prayers in knee-deep water. Officials said that the sprinkling work will also continue till November 20 for which the agency has deployed 10 boats. DJB will also monitor water parameters during this period, the officials said.

Meanwhile, the opposition Bharatiya Janata Party (BJP) alleged that the "spraying of chemicals" is being carried out to "suppress the poisonous foam".

Delhi ministers and mayor Shelly Oberoi also took stock of Chhath preparations at some of the 1,000 ghats readied for the festival. Water minister Atishi said that DJB is sprinkling food grade chemicals and enzymes to tackle the foam.

"The sprinkling to remove the froth has been started using 10 boats and dedicated teams. In the next two days, the foam will completely vanish," she said.

The Delhi government has blamed the neighbouring Uttar Pradesh for releasing polluted water through the Okhla irrigation barrage into Kalindi Kunj. The presence of phosphates and surfactants in untreated sewage is a major reason behind frothing in the river, according to experts.

To be sure, untreated sewage flows into the Yamuna from UP, Haryana and Delhi via 23 different drains, including the major outfalls of Najafgarh and Shahdara drain. A defoamer or an anti-foaming agent is a chemical additive that reduces foam formation in industrial process liquids. However, experts said that the solution is only temporary.

Atishi said: "At the time of

## A recurring problem

Every year, as winter sets in, the Yamuna is blanketed by thick sheets of foam. This froth is toxic, and can have extremely adverse effects if it is consumed, or even touched

### What is foam or froth formation?

Foam or froth formation is a phenomenon that takes place on many lakes and streams. Foam bubbles are produced when organic matter decomposes. These foam-producing molecules have one end that repels water and another end that attracts water and they work to reduce the surface tension on the water surface. These foam bubbles are lighter than water, so they float on the surface as a thin film that gradually accumulates.

### What is foam made of?

About 1% of the foam is made up of foaming agents like phosphates and surfactants. The remaining 99% is air and water.

### Why does foam form in places like the Kalindi Kunj Okhla barrage?

When water with surfactants or detergent-like molecules fall from a height (such as the Okhla barrage), they churn to form bubbles in water. Foam begins to form after monsoon, but intensify as winter approaches, because foam bubbles are much more stable in lower temperatures

### What are the sources of pollution that cause foam formation?

- Untreated sewage may contain soap/detergent particles
- Industrial run-off
- Organic matter from decomposing vegetation
- Presence of filamentous bacteria that let out surfactant molecules
- Pollutants from sugar and paper industries in UP that travel through the Hindon Canal

### Health hazards

- Short-term exposure can lead to skin irritation, allergies
- Ingestion may cause gastrointestinal problems and diseases like typhoid
- Long-term exposure to heavy metals in industrial pollutants can cause neurological issues and hormonal imbalances

### How can froth formation be stopped?

#### IN THE SHORT TERM

- Rid Okhla pondage of water hyacinth
- Detergents must be biodegradable so they do not persist and lose their ability to cause foam

#### IN THE LONG TERM

- UP, Haryana, Delhi need to upgrade sewage treatment plants
- Industrial pollution to be stopped
- Increasing the flow of the river



SUNIL GHOSH/HT PHOTO

Chhath, we are making these preparations so that people of Delhi do not face any problems but we also request the UP irrigation department not to send polluted water to Delhi."

DJB vice-chairman and MLA from Malviya Nagar, Somnath Bharti, took part in the sprinkling work at Kalindi Kunj.

"More than 1,000 Chhath ghats have been built in Delhi so that devotees can offer Arghya," he said.

Bharti said that the foam is also formed as the water falls from a greater height from the barrage. "The control of Kalindi Kunj Barrage is with the BJP-ruled Uttar Pradesh government

and they probably deliberately open only the gates of the barrage which are on the Delhi side," Bharti alleged.

However, BJP MP Manoj Tiwari said that the Delhi government failed to clean the river despite getting adequate funds. "Will Yamuna water not be contaminated by this chemical? Will

it not harm animals and devotees? The government does not care about Yamuna the whole year but when Chhath Puja comes, they spray chemicals to hide their failure. If this chemical is not harmful then why is it not sprayed throughout the year? Even after giving lakhs of crores of rupees by the Central Government for cleaning Yamuna, the condition of Yamuna is still bad...." he added. The AAP's Atishi termed the accusations as "baseless".

It was not immediately clear what chemical was used in the anti-foaming agent.

Every year, as the festival arrives, so do the pictures of devotees offering prayers while standing in waist-deep in the frothing water near Kalindi Kunj, indicating the lack of dissolved oxygen, and high surfactant pollutant load in the river stretch along the Okhla barrage..

A senior DJB official said the froth bubbles are caused due to soap-like surfactant molecules and when the water falls from a height in the Okhla barrage, it leads to churning of the polluted water as well as increased frothing. "There are biological and chemicals causes behind the presence of surfactant molecules. It can be due to detergents and surfactants in untreated domestic sewage, pollutants from industries as well as materials released by decomposition of dying water hyacinth weeds in the Okhla barrage," the official said, requesting anonymity.

Diwan Singh, an environmental activist who led Yamuna Satyagrah for rejuvenating the river and other water bodies, said that the foam formation indicated that large amount of waste water untreated sewage and effluents from industries are coming into the river without any treatment.

"Out of 36 sewage treatment plants, 22 are working below parameters. Detergents and chemicals are being discharged into the river," Singh said, adding that the defoaming agent will only serve as a temporary solution.



Amar Ujala- 17- November-2023

# यमुना नदी ने ओढ़ी सफेदी की चादर, हर तरफ पसरा झाग

दूर-दूर तक फैला झाग छठ व्रतियों के सब्र का इम्तिहान लेता नजर आ रहा

संतोष कुमार

नई दिल्ली। चार दिवसीय छठ पर्व शुरू होने से पहले यमुना ने सफेदी की चादर ओढ़ ली है। दूर-दूर तक फैले झाग की मोटी चादर छठ व्रतियों के सब्र का इम्तिहान लेती नजर आ रही है। ओखला बैराज के बाद नदी का पानी भी दिखना मुश्किल है। बीते सालों की तरह यमुना के झाग ने दिल्ली की सियासी तपिश भी बढ़ाई है। दिल्ली सरकार व भाजपा ने एक-दूसरे को कठघरे में खड़ा किया है।

एनजीटी की एक रिपोर्ट के मुताबिक, यमुना की लंबाई करीब 1,370 किमी है। इसमें से पल्ला से कालिंदी कुंज की लंबाई 54 किमी है। वजीराबाद से कालिंदी कुंज तक का हिस्सा 22 किमी है। यह नदी की पूरी लंबाई का सिर्फ दो फीसदी है, लेकिन करीब 76 फीसदी प्रदूषण इसी हिस्से में होता है।

मानसून के अलावा साल के नौ महीनों में नदी में ताजा पानी नहीं रहता। छठ से पहले अचानक से उठ रहे झाग पर पर्यावरणविदों का कहना है कि समुद्र, नदी समेत दूसरे जल स्रोतों में अमूमन झाग वसा के अणु वाले पौधों के गलने से बनता है, लेकिन इस वक्त यमुना के झाग के मूल में फास्फेट व नाइट्रेट हैं।

यमुना के शोधार्थी व फिलहाल सेंट्रल युनिवर्सिटी ऑफ साउथ बिहार के प्रोफेसर डॉ. रामकुमार सिंह के अनुसार, साल भर प्रदूषित रहने वाली यमुना में इस वक्त झाग ज्यादा इसलिए दिखता है, क्योंकि सर्दी बढ़ने के साथ आक्सीजन बनने की प्रक्रिया जिसे आक्सीजनेशन कहते हैं धीमी पड़

विशेषज्ञ बोले, ऑक्सीजन बनने की प्रक्रिया धीमी होने व बैराज से ऊंचाई से पानी गिरना झाग की बड़ी वजह



बदतर: कालिंदी कुंज पर बृहस्पतिवार को हर तरफ झाग ही झाग दिखाई दिया। -भूपिंदर सिंह

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किमी है  
वजीराबाद  
से कालिंदी  
कुंज तक  
का हिस्सा

जाती है। वहीं, ऊपर से यमुना में छठ व्रतियों के लिए ज्यादा पानी छोड़ा जाता है। ओखला बैराज से तेजी से पानी नीचे गिरने पर झाग बनता है। रामकुमार सिंह मानते हैं कि यह तो दूषित नदी के विज्ञान का सामान्य सिद्धांत है। यूरोपीय देशों के अध्ययन बताते हैं कि इसकी एक वजह नदी में अचानक से दूषित पानी में शैवालों का बढ़ जाना भी होता है। इसके लिए अलग से अध्ययन की जरूरत है, तभी वास्तविक तस्वीर सामने आएगी।

दूसरी तरफ दिल्ली के बायोडायवर्सिटी पार्क के इंचार्ज फैयाज खुदसर बताते हैं कि पेड़-पौधों के वसा से बनने वाला झाग नुकसानदेह नहीं होता, लेकिन फास्फेट व नाइट्रेट त्वचा को नुकसान पहुंचाता है। फास्फेट पानी की बूंदों के सतह का तनाव (सर्फेस

## इसलिए बनता है झाग

- कालिंदी कुंज में ज्यादा झाग इसलिए बनता है, क्योंकि इस हिस्से में नदी पूरी तरह प्रदूषित है और पानी ओखला बैराज से ऊंचाई से छोड़ा जाता है।
- आक्सीजनेशन की प्रक्रिया सर्दी शुरू होने के साथ कम हो जाती है।
- छठ व्रतियों को लिए ज्यादा पानी छोड़ा जाता है, जिसमें ज्यादा

फास्फेट होता है।

- कार्बनिक अणुओं के सड़ने से झाग बनता है।
- पेड़-पौधों के अलावा घरों व फैक्ट्रियों से निकलने वाले सीवेज से भी यह बनता है।
- इससे पानी का सतही तनाव कम हो जाता है और बुलबुला पानी की सतह पर तैरता है।

## यूं आता है फास्फेट व नाइट्रेट

फास्फेट व नाइट्रेट एक तो घरों में इस्तेमाल होने वाले साबुन से आता है। फैक्ट्रियां भी इसकी मात्रा बढ़ा देती हैं। इससे यह भी साबित हो रहा है कि यमुना में बड़ी मात्रा में शोधित किए बिना सीवेज छोड़ा जा रहा है। साबुन में फास्फेट कम करने से झाग भी सीमित हो जाएगा।

टेंशन) कम कर देता है। इससे बड़ी मात्रा में झाग बनता है। यह पानी ऊंचाई से गिरता है तो झाग की मात्रा बढ़ जाती है। सर्दी में तापमान कम होने और हवा दबाव बढ़ने से झाग बनने की तीव्रता बढ़ जाती है।