المركز الإقليمي للعواصف الغبارية والرملية
Sand and Dust Storm Regional Center

المركز الوطني للأرصاد
National Center for Meteorology

Dust and Sandstorms Events in October 2024

Executive Summary:

This report presents an in-depth analysis of dust and sandstorm (SDS) events across Saudi Arabia during October 2024, benchmarked against the 21-year climatological average (2003–2023). A total of 28 dust hours distributed over 16 days were recorded, reflecting a 75% decrease in dust hours and a 56% decrease in dust days compared to the long-term mean (110 hours; 36 days). Regional variations were pronounced: the Eastern Province recorded minimal activity, with Dammam (1 d; 1 h, –1 h) the only active station, while Al-Ahsa and Dhahran dropped to zero (–2 d; –8 h and –1 d; –2 h). Hafar Al-Batin (–3 d; –10 h). The Central Region showed localized anomalies: Al-Kharj (2 d; 4 h, +1 d; +2 h) and Riyadh (2 d; 4 h, +1 d; +2 h) both exceeded their climatology, while Al-Dawadmi (2 d; 3 h, near normal in days but –4 h) recorded a deficit. Al-Qassim had no events (–2 d; –7 h). The Northern Region was largely suppressed: Al-Qurayyat (1 d; 5 h, normal in days, +2 h) stood out, while Arar, Rafha, Tabuk, and Turaif all dropped to zero. Al-Jawf also showed no events (–2 d; –8 h). The Western Region reported limited activity: Jeddah (2 d; 2 h, +1 d; –1 h) was slightly above normal in days, while Yanbu remained inactive (–1 d; –1 h). Al-Madinah (1 d; 2 h, +1 d; +2 h) was the only active inland western station. The Southern and Southwestern Regions showed contrasting patterns: Sharurah (2 d; 3 h, +1 d; +2 h) and Najran (1 d; 1 h, +1 d; +1 h) exceeded their averages, while Bisha (1 d; 2 h, normal) and Jizan (1 d; 1 h, –1 d; –1 h) recorded marginal activity. Abha, Taif, and Khamis Mushait had no events. On the event scale, blowing dust (BLDU) dominated, with minor dust and sandstorm (1 DS/1 SS) events reported. These results emphasize that October 2024 remained well below climatology nationwide. However, positive anomalies at Sharurah, Najran, Al-Kharj, and Riyadh contrasted with widespread suppression across the Eastern and Northern regions.