The story of how asafoetida came to be successfully cultivated in India

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Context

• Heeng or asafoetida (Ferula assa-foetida) is an essential ingredient in many Indian cuisines. A pinch of heeng is typically added to hot oil before other constituents when cooking.

• There are **mentions of heeng** in ancient Indian texts including the **Mahabharata and texts of Ayurveda.** The latter recommends using heeng to **refresh one's senses, including consciousness.**

• The **Charaka Sanhita Sutrasthana** 27/299 says heeng can help **relieve abdominal pain, digest undigested food, and enhance taste.** The **Pippalada Samhita and the works of Panini** also include heeng.

• Today, heeng plants **thrive in cold, arid environments** suited to the **native regions in Iran, Afghanistan, and Central Asia.**

• The plant prefers sandy, well-drained soil with **low moisture, ideally receiving annual rainfall of 200 mm or less,** though it can tolerate up to 300 mm in cultivated regions like the Indian Himalayas. It flourishes in **temperatures of 10-20° C,** tolerates highs of up to 40° C, and withstands winter lows down to –4° C. In **extremely dry and cold weather**, heeng plants typically become **dormant** to survive.

• These requirements make **high-altitude, semi-arid regions like Lahaul-Spiti and Uttarkashi in India suitable for its cultivation**. **Excessive rainfall or high soil moisture can hinder growth.**

• The final product obtained from the plant, asafoetida, is derived from an **oleo-gum resin extracted from the plant's thick, fleshy taproot and rhizome,** which makes up 40-64% of the dried gum.

• Heeng is a **perennial plant** that typically **takes five years to mature and start flowering**. Incisions are then made in the taproot, allowing the **milky latex to exude and harden into a gum-like substance.** This **resin is dried and processed into powder or crystal form** for culinary and medicinal use.

• Until early last decade, despite being the **world's largest consumer of heeng, India depended on imports from Afghanistan, Iran, and Uzbekistan,** among others.

• The government subsequently launched a **national effort to promote indigenous cultivation of heeng.**

• This mission was led by the **CSIR-Institute of Himalayan Bioresource Technology (IHBT) in Palampur, Himachal Pradesh.**

• Researchers here took up the challenge of **introducing heeng to Indian soil for the first time,** starting with a rigorous and multi-layered international search from **2018 and 2020** to procure viable seeds of heeng.

• As part of this programme, CSIR-IHBT scientists communicated with the relevant agencies in Iran, Afghanistan, Uzbekistan, Tajikistan, and South Africa and contacted more than 20 suppliers. These efforts culminated in the

procurement of heeng seeds, initially from Iran, and later from Afghanistan.