



Indian Standard IS 7593 P1 : 1986 POWER-OPERATED PNEUMATIC SPRAYER-CUM-DUSTER- Summary

- **Power-operated pneumatic sprayer-cum-dusters** are versatile agricultural tools designed to apply pesticides and dust-based treatments efficiently over large crop areas, helping farmers manage pests, weeds, and diseases. These machines use **compressed air to create a fine mist or dust cloud**, allowing for even distribution of chemicals over plants and soil. This equipment is essential in modern agriculture as it enhances the effectiveness of pest control treatments, reduces labour, and saves time compared to manual spraying methods. This is used for **spraying the pesticides in liquid form and convertible into duster for dusting the pesticides in powder form**. This machine popularly known as **mist blower**.
- **IS 7593**, which specifies requirements for their **design, construction including material requirements, performance, and safety requirements**. **IS 7593** outlines requirements for the **structural integrity and durability of components**, ensuring the sprayer can withstand regular field use without breakdown. It permits use of different materials ranging **from plastics, fibreglass, mild steel for different components of the machine**. Standard also specifies **performance parameter** requirements ensuring **air delivery of min 6 m³ air/min, liquid discharge rate of min 0.3 to 2 lit of liquid/min, dust discharge rate of min 0.5 kg dust powder/min** etc.
It specifies **operational parameters** like **tank capacity, air pressure levels, and spray uniformity**, ensuring consistent application rates and coverage to prevent under or over-application, which could harm crops or the environment.
- **Safety guidelines-** under IS 7593 also address the risks associated with operating pneumatic sprayers, mandating features such as pressure regulators, sturdy hoses, and user-friendly controls to prevent accidental release of chemicals or over-pressurization, which could cause operator injury or damage the equipment. Standard addresses the requirement of **operational and maintenance manual** to be provided along with the machinery to safeguard user's interest. Additionally, IS 7593 includes maintenance recommendations to prolong the equipment's life and ensure it operates safely, emphasizing regular checks for leaks, wear, and proper calibration of the spraying mechanism.
- Proper adherence to IS 7593 helps safeguard users, maintain machine efficiency, and enhance environmental protection by promoting the correct use of agricultural chemicals, thus minimizing potential pollution and off-target contamination. With the adoption of IS 7593-compliant sprayer-cum-dusters, **farmers benefit from improved pest control, reduced health risks, and better crop yields, while also supporting sustainable agricultural practices by lowering chemical waste and enhancing precision in pesticide application**.