



IS 1051: 1980 'Specification for Pyrethrum Extracts'

Pyrethrum extract is a **natural insecticide** derived from the flowers of certain chrysanthemum species, primarily *Chrysanthemum cinerariifolium* and *Chrysanthemum coccineum*. This extract contains active compounds called pyrethrins, which are highly effective against a wide range of insect pests, including flies, mosquitoes, beetles, and aphids.

As a pesticide, pyrethrum is often valued for its **fast-acting** and **potent effects**, while also being less toxic to humans and animals when used as directed. However, it can still pose environmental risks, particularly to beneficial insects like bees, if not applied carefully. Pyrethrum extract is commonly used in **organic and conventional agriculture**, as well as in household pest control products.

Consumers expect high-quality pyrethrum extract to have a **high pyrethrin content** (typically 20-25%) for effective pest control. **Purity** and minimal impurities are essential to maximize potency and safety. The extract should be **stable** with a good shelf life, retaining its effectiveness over time. Consumers also look for **low toxicity** to humans and animals and **minimal environmental impact**, especially regarding beneficial insects.

IS 1051:1980 prescribes physicochemical requirements for pyrethrum extract. In order to address consumer expectations for quality of pyrethrum extract requirements such as by specifying colour and odour, pyrethrin content, purity etc. The standard prescribes precise measurement of **total pyrethrin content**, allowing only a small tolerance from the nominal value, ensuring potency and efficacy. Techniques like thin-layer chromatography are prescribed to ensure authenticity and natural purity and detect any synthetic additives such as **synthetic pyrethroids**. Additionally, the mercury reduction method is used to measure pyrethrin content. The extract must have a **greenish-yellow colour** and characteristic pyrethrum odour, ensuring authenticity and quality appeal. For the purpose of ensuring safe storage, the standard specifies **flash point** of not below 32.0°C. The standard also mandates the labelling of containers to mark details like product name, manufacturer, date of manufacture, batch number, net volume, and warnings as per the Insecticides Act, supporting consumer safety and compliance.