

# Family Rutaceae in Kashmir Himalyas: *Poncirus trifoliata* (L) Raf. - A New Record for Flora of Kashmir, India

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**Abstract:** During our floristic study we recorded the occurrence of *Poncirus trifoliata* in many areas of Kashmir valley. This is the first exotic record of family Rutaceae from Kashmir Himalayas. The species has been introduced from Japan and has naturalized in the valley. The plants of this species are winter hardy and produce a good number of fruits and seeds and thus proliferate at a faster rate. The species is resistant to herbivory and other local pests (released from its enemies) with good reproductive success and high potential of invasiveness. [Academia Arena, 2010;2(5):40-41] (ISSN 1553-992X).

**Key Words:** *Poncirus trifoliata*, Rutaceae, Kashmir valley, naturalized, invasive

## 1. Introduction

The Valley of Kashmir is housing a rich flora and fauna (4). The flora of Kashmir India is constantly witnessing additions and introductions from other parts of the world (3, 4, 5, 6). The horticulture is the main pathway leading to the introduction of exotics species into the valley. A lot of exotic species have been introduced deliberately into this part of country among which maximum are in way of naturalization, many have naturalized and a good number of species have turned invasive. The present study is a part of our floristic studies on exotics of Kashmir valley.

## 2. Description

Deciduous well-branched, thorny small tree or large shrub, from China and Korea (1, 2, 7), with hard and angled green shoots bearing flattened, strong sharp pointed thorns: Leaves—alternate, 3-foliolate, dark green, glaucous, 2.5-6 cm long, exstipulate, with winged rachis and petiole, borne on old wood; leaflets—elliptic to obovate, crenate, to 5 cm long, obtuse, slightly emarginated, turning yellow in October: Flowers—solitary or in 2's, borne in advance of foliage on old wood in mid April, bisexual, white, saucer-shaped, fragrant, to 5 cm across; calyx of 5 sepals, often connate; corolla 5-petalled; stamens distinct, inserted at the base of a thick annular disc; ovary single, usually 7-celled, styles connate; fruit orange-like, densely pubescent, unpalatable, extremely sour, first green then orange, very fragrant, 3-5 cm across,

## 3. Phenology

**3.1 Flowering time:** April

**3.2 Flowering period:** From 17-4-2006 to 26-4-2006 (1st year); From 15-4-2007 to 24-4-2007 (2<sup>nd</sup> year).

## 4. Distribution

**4.1 Global:** North China and Korea

**4.2 Local:** Sheri-Kashmir University of Agricultural Sciences and Technology-Kashmir

**5. Common name(s):** Hardy orange/ Japanese orange/ Bitter orange/Trifoliolate orange

**6. Habit of Growth:** Rounded.

**7. Rate of Growth:** Slow

**8. Habit Preference:** Full sun; fertile well-drained soil

**9. Cold Hardiness:** Fully Hardy (withstands -15<sup>o</sup>C minimum)

**10. Dimensions:** height 4.2 m; spread 4 m.

**11. Landscape use:** Suitable for a border or hedging especially for remote portions of the landscape and also effective as a specimen plant because of its interesting and unusual winter form displaying naked glossy green branches and impressive pointed thorns.

**12. Horticultural use:** *Poncirus trifoliata* and citrus are related and graft compatible, but former differing in ability to withstand cold. Commercially *Poncirus trifoliata* is often used as a hardy rootstock for oranges and other citrus cultivars which provide them with resistance to some diseases, increased cold-hardiness and high quality fruit.

The species was purposely introduced to Kashmir for growing and cultivating varieties

of oranges on rootstocks of *Poncirus trifoliata*. *Poncirus trifoliata* stemmed the hope of growing oranges in temperate Kashmir Valley.

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