



Armoracia rustica Schur

BRASSICACEAE

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Local Names

Georgian: პირშუშხა (p'irshushkha), ხრენი (khreni); **Russian,** Хрен (chren); **Azeri,** ГЫТЫГОТУ (gytygotu) (Grossheim 1952; Ketskhoveri et al. 1971–2011; Makashvili 1991).

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K. Batsatsashvili et al. (eds.), *Ethnobotany of the Mountain Regions of Far Eastern Europe*, Ethnobotany of Mountain Regions,

https://doi.org/10.1007/978-3-030-28940-9_15

Botany and Ecology

Perennial, with stout, fleshy root; stem erect, branching, 0.5–1.5 m high; radical leaves very large, oblong or oblong-ovate, crenate, cordate, lower cauline leaves pinnatifid, middle leaves oblong-lanceolate, the upper linear, subentire. Sepals ca. 3 mm long; petals ca. 6 mm long, white, short-clawed; fruiting racemes elongated, pedicels erect; silicles oblong-ovate, inflated, 5–6 mm long, one-fourth to one-fifth as long as pedicels; valves netted-veined, without midrib, cells with four seeds, style very short. Flowering June. Originally all over Ural, and planted in the Caucasus, on damp meadows, along the banks of rivers and on abandoned farmland (Bobrov and Bush 1939; Figs. 1 and 2).

Phytochemistry

Especially in the roots carbohydrates (glucose, galactose, arabinose, xylose, sucrose, lentozans, polysaccharides, galacturonic, acid); some alkaloids, saponins, vitamins (C, B1, B2), flavonoids (camphorol, quercetin, kaempferol, quercetine), thiolokosides (sinigrin, ryukonsturtisine), saponins (Sokolov 1985).

Local Medicinal Uses

The roots are part of the official central Uralian herbal pharmacopoeia. In the Caucasus gruel, fresh juice and infusions are used to induce gastric emptying, improve digestion, and remedy liver diseases, urinary problems, and as antiscorbutic and expectorant. Poultices are employed for skin cancer and other skin diseases. The root is used for toothache and as anti-inflammatory. Decoctions serve to treat diseases of the throat, mucous membranes, otitis, purulent wounds, rheumatism, radiculitis, neuralgia, sciatica, baldness, seborrhea, and urticaria. For cosmetic purposes, the plant is used to remove freckles and pigmentary spots and contains

Fig. 1 *Armoracia rusticana* (Brassicaceae), Svaneti, Georgia (R.W. Bussmann & N.Y. Paniagua-Zambrana)



Fig. 2 *Armoracia rusticana* (Brassicaceae), leaves ready to eat, Svaneti, Georgia (R.W. Bussmann & N.Y. Paniagua-Zambrana)



l,azacime in the roots that acts as antibacterial (Grossheim 1952; Sokolov 1985). The roots are chewed for gum inflammations (Bussmann et al. 2016).

Local Food Uses

As spice and seasoning for food, and in the canning industry, *Armoracia* extract help to preserve fruits, vegetables, and meat (Sokolov 1985).

The roots and leaves are used as spice; the leaves are eaten raw (Bussmann et al. 2016).

Local Handicraft and Other Uses

Sometimes planted as ornamental. In large doses, the plant extract causes renal cramping and can lead to poisoning of cattle and pigs (Sokolov 1985).

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