

Plants with both effects of toxin and medicine

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Plant has been affected by food and medicine for a long time to human life. In this lecture, I want to introduce familiar toxic plant, Aconitum species. And I will introduce some plants that Ainu people have traditionally used for treatment of pain.

Aconitum plant belongs to Aconitum genera in Ranunculaceae, and seven species grow in wild in Hokkaido. The Aconitum species for medicine is cultivated at Toyoura area in Hokkaido and its production amounts to 70% in total consumption in Japan. The toxic principles are aconitine, jesaconitine, and mesaconitine which are diterpene alkaloid. Those aconitine type alkaloid has the most toxic in higher plants, and the toxicity is induce the aconitine syndrome in mice as follows; promotion of breathing (inhibition in later), increasing of saliva secretion, paralysis of hind legs, vomiting, swelling of eyeball, paralysis of front legs, and stop of breathing to death.

The toxic Aconitum root for therapeutic medicine is autoclaved at 110°C, 40 minutes to reduce the toxicity. The therapeutic effect of the reduced Aconitum root (bushi) is claimed to be analgesic, diuretic, cardiac, and an accelerating effect on metabolism. Those effects are considered on base of improving the circulation of peripheral blood flow. Our research group has found some biologically active compounds on peripheral blood flow increasing effect from Aconitum root. In this Café, I want to introduce some products containing the active compound fraction.

Dr. Kinoshita published studies on disease and the medical treatments of Ainu people in 1983. In this Café, I deal with 22 traditional plants for using of treatment for pain among his studies. Ainu people have used many plants for treatment of disease, but we have to understand at first that psychological effect of exorcism and shamanism on patients is very important in their cultur.