

Fagopyrum dibotrys (D. Don) Hara is an ethnomedicine of the Darjeeling and Sikkim Himalayas. The culturally distinct region is being used this plant from the time immemorial. This plant has been used against the hypertension, jaundice, paralysis etc (Basu, 1997; Pradhan and Basu, 1998). Here in this region, this ethnomedicinal plant is well – known as *Fagopyrum dibotrys* (D. Don) Hara but the use of other name such as *Fagopyrum cymosum*, *Polygonum cymosum*, *Fagopyrum cymosum* M., *Fagopyrum cymosum* Meissn, *Fagopyrum cymosum* (Trev) Meissn in the literature has created confusion. Thus felt it is necessary to study the nomenclature of this plant.

The plants that were collected from Darjeeling and Gangtok were different in the colour of the leaves, stem and stamen number in flower. Here, an attempt has been made with a chemotaxonomical approach to distinguish these plants into varietal level. The number of natural products, which were isolated from the plant, represented by *Fagopyrum cymosum* (Tsuzuki and Yamamoto, 1990; Furuya, 1951) but they have not cited author properly. It is very difficult to understand the plant, which they had taken into consideration to work out.

The flavonoids, one of the most numerous and widespread groups of natural constituents, are important to man not only because they contribute to plant colour but also because many members are physiologically active. Nearly two thousand substances have been described and as a group they are universally distributed among vascular plants (Harborne, 1973, 1975; Geissman 1962). Flavonoid compounds have attracted the attention of inquiring minds for many centuries. Certain flavones are among the earliest known natural dyestuff. The conspicuous colors that anthocyanins impart to flowers, fruit and leaves have made them objects of interest and speculation to researchers. The importance of flavonoid compounds more recently, in the flavour qualities of foodstuffs have led to many recent investigation on it. Present day studies on the bioactivities, physiological activities and biosynthesis of flavonoid compounds continue to add new information to this

field. The flavonoid was noted to store in the leaves, stem, rhizome and flower of *Fagopyrum dibotrys* (D. Don) Hara (Liu et al., 1981, 1983, Liang and Xiao, 1990). For a long time flavonoids as with other secondary plant products have been regarded as metabolically inactive and products stored as waste material in various plant tissues (Schwarze, 1958; Reznik, 1960). A number of the bioactivities of the flavonoids such as anti-tumour activities, activation of lymphocytes, anti-diabetic, hypertension, etc have been noted (Wagenbreth et al, 1996; Pierzynowska, 1998; Webster et al., 1996) but no work has so far been made in connection with the understanding of bioactivities of natural products isolated from *Fagopyrum dibotrys* (D. Don) Hara. Thus an attempt has been made to investigate the plant for understanding bioactivities of natural products. Besides a precise as well as a quick method for systematic quantitative analysis of rutin from the leaves of *Fagopyrum dibotrys* (D. Don) Hara has been made on the basis of certain principle of chemical reaction noted earlier. This work will ultimately be helpful for quantitative determination of active principle from the leaves of *Fagopyrum dibotrys* (D. Don) Hara of both Darjeeling and Gangtok varieties. While working on the isolation of various chemical components in the leaves, stem, rhizome and flower of *Fagopyrum dibotrys* (D. Don) Hara of the Darjeeling and Gangtok varieties, few isolated natural products are supposed to be a new record. An attempt has been made to ascertain the chemicals, on the basis of some chemical and physical data. But detailed chemistry of it of the isolated products is not possible due to paucity of material.

Fagopyrum dibotrys (D. Don) Hara of both Darjeeling and Gangtok varieties found to be similar in morphology, because of this reason an attempt has been made to investigate to distinguish the two plants both from morphological and chemical point of views.

The few chemical works were performed in *Fagopyrum dibotrys* (D. Don) Hara of both Darjeeling and Gangtok varieties and needs investigation for their chemical nature. *Fagopyrum dibotrys* (D. Don) Hara of both Darjeeling and Gangtok varieties have been studied physiologically under different

treatments and conditions to work out optimum condition for the production of the maximum vegetative part.

Macroscopic and microscopic observations of *Fagopyrum dibotrys* (D. Don) Hara have been felt necessary to support the chemotaxonomic work. It is expected to support the classical taxonomy or alpha taxonomy.

Since the time immemorial, people are fighting against the diseases and the different people of the different regions are being survived by practicing the ethnomedicine. It is a common practice in the hill areas of Darjeeling and Sikkim. A number of reports on ethnomedicines in the region is available but no report has so far been made on this aspect related to *Fagopyrum dibotrys* (D. Don) Hara (Rai and Bhujel, 1999; Bhujel, 1996).

Recently biotechnology is being used in connection with the commercial productivity of some pharmaceutically important natural products. Takamoto (1988) attempted the tissue culture of *Fagopyrum dibotrys* (D. Don) Hara in B₅ medium and Murashige and Skoog medium for the shoot and root development.

Here an attempt has been made to investigate tissue culture of the plant for its commercial utilization.

With this background, the plant has been studied giving special emphasis on pharmacognosy where, macroscopic, microscopic, biochemicals and chemical screening of various chemical constituents are performed. The knowledge derived out of which will be of much help during purposeful utilization of plant specially for the economic development of these regions by setting natural products industries which ultimately, may also help the mankind to freed from the diseases.