

## Breeding of Russian dandelion (*Taraxacum koksaghyz*) – From the wild type to a new resource for a sustainable rubber production

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So far, the production of natural rubber has been depending almost entirely on *Hevea brasiliensis*, a tree that is grown in only a few countries. The idea of cultivating Russian dandelion as an alternative rubber resource crop is not really new, but industrial production has never been performed consequently. Now, with various scientific and economical forces, the rubber production of Russian dandelion shall be enhanced and used for a sustainable production of tires and other natural rubber demanding products.

Since *Taraxacum koksaghyz* shows high diversity and relatively weak growth, it is still considered a wild type. In order to get this wild type on its way to a serious rubber producing crop, this work aims to gain insights into the genetic background of Russian dandelion and provide important information for promising breeding programs in a network of different research institutions and a breeding company.

In close cooperation with the breeding partner, the comprehensive genetic variability of *Taraxacum koksaghyz* shall be used for the development of new varieties with high level and quality of rubber. On that account, different agronomic traits, such as the formation of a clear taproot with high contents in rubber and inulin, early and uniform flowering time, tolerance to high planting density, as well as different disease resistances, have been defined as breeding objectives. These objectives will be supported by (I) drafting a dendrogram of different *Taraxacum* species based on AFLP analysis, (II) development of a genetic map of *T. koksaghyz* as a tool for selection markers and (III) a marker-assisted advanced backcross program. These work packages are focused on providing information and genetic tools for marker-assisted breeding of *T. koksaghyz* as a commercial rubber crop.