

Nepalese climbing rice bean

Product Description

The Climbing Rice Bean (*Vigna umbellata*), also known as Red bean, rice bean, and oriental bean, is a tropical to temperate grain legume from Asia which is used primarily for food. Both its bean seeds and vegetative parts can also be used for fodder. Similar in size and colour, but not shape to the red kidney bean, the Climbing Rice Bean can be grown annually as erect, semi-erect or twining. It climbs from 30-100 cm to 200 cm in height. Its root system is quite extensive with a primary taproot which can bore into the soil at levels as deep as 100-150 cm. The stems of the plant are branched with fine hairs. The leaves are approximately 6-9 cm long and group in bunches of three. The flowers are bright yellow. The fruits are elongated pods approximately 7.5-12.5 cm long which contain 6-8 mm seeds.

Description of Where/How the Product is Grown, Raised, and Processed

Ricebean is grown in modest areas by subsistence farmers in the hilly regions of Nepal, parts of Southeast Asia, and Northern and Northeastern India. It is highly adaptive, and grows in a range of conditions. Ricebean [is] “well known among farmers for its wide adaptation and production even in marginal lands, drought-prone sloping areas, and flat rainfed *tars*” (Dwivedi, 1996, 737). Its growth ranges from between 700 and 1300 m above sea level for commercial productivity and from 200 to up to 2000 m above sea level in home gardens; perfect for growing in Nepal’s hilly areas—which range between 1000-4000 meters in altitude, with the majority of the population settling in areas with lower altitude (country studies). The majority of rice beans grown in Nepal are intended for use as food for human consumption; although some bean and plant vegetation are commonly used for fodder and green manure.

Growing Conditions of Product

Ricebean matures in under 60 days, and is highly drought tolerant (NAS 1979). Generally, ricebean is intercropped with corn, grown on rice terrace risers, or grown alone as a sole crop. When acting as a mixed crop with corn it is usually broadcast between the sowing of corn, and its first and second earthing up; thus ricebean sowing can last from April or May to June.

Ricebean is valuable as a green manure in depleted soils—especially on hillsides where runoff erodes the soil of nutrients— in mixed cropping with a variety of corn landraces, and for its ability to prevent soil erosion. Ricebean receives very few inputs, requires very little fertilizer—if any—and “is grown on residual fertility and moisture and in marginal and exhausted soils” (Lawn, 1995). Thus, Ricebean is ideal for hillside farming as it provides nitrogen to the soil—eliminating much of the need for synthetic fertilizers, and also acting to improve the yields of corn—and it can be sold by itself once it is grown, providing poor hillside farmers with another source of income. Some anecdotal evidence indicates that the growing and cultivation of Ricebean in Nepal is declining in response to the introduction of high yielding corn landraces and the increase in the use of fertilizers; while local consumption is declining because of the increased availability of more favoured foods in local markets (Lawn, 1995).

Other Agronomic Issues

Some of the major constraints of ricebean include its low seed yields, susceptibility to diseases and pests, and indeterminate flowering.

Many Ricebean landraces are photoperiod-sensitive, and thus, “tend to be late flowering and produce vigorous vegetative growth when grown under conditions of ample water and warm or high temperature in the subtropics” (Lawn, 1995). Thus, this would produce concerns for farmers growing in the sub-tropical regions of Nepal—including hillside farmers near the Himalayan subtropical broadleaf forests.

The twining habit of Ricebean vines makes them easy to grow as intercrops with corn, however, “this also makes them difficult to harvest mechanically. Present varieties are also shatter-susceptible, and hard-seededness is present: this trait does not appear to be consistent within [landraces]” (Lawn, 1995).

However, the largest problem with Ricebean is that very little modern plant breeding has been done, and the landraces that are grown have low yield potentials. The landraces that are grown are in direct competition with other summer legumes such as soybeans (*Glycine max*), black gram, cowpea, common beans (*Phaseolus vulgaris*) and horse gram (*Mactrotyloma uniflorum*) (Lawn, 1995). Thus, there is hope for Ricebean however, as many of these traits could be eliminated by natural breeders if there was attention drawn to this crop.

Benefits to Nepal

1. It would contribute to Nepal's GDP: Any sales of Climbing Rice Bean exceeding production costs, will help to contribute to the increase in the nation's fiscal productivity. Exporting ethnic produce in this form often has a trickle-up effect by opening new markets for other items of produce.
2. Increases economic prosperity for rural communities: With an increasing trend in ethnic foods in Canada and many other countries world-wide, it is not difficult to see the prosperity this will bring to local economies (National Academy for Sciences, 1979). As this trend increases, local Nepalese villagers will benefit significantly for producing a product which has a market trending highly in North America and Europe.
3. Increases quality of life for farmers: Individual farmers and their families will benefit considerably. Granted, trends in such products tend to wax and wane at different economic times; however, there has been relative stability and a trending increase over the last decade or so for such so-called ethnic delicacies.
4. Political ties to Canada to open up possibilities with trade in other goods, products, or services: As the trending for such foods continues its positive trajectory, Canada and Nepal will build greater and stronger ties through the importing of more diverse foods and products. This in turn, will benefit both countries not only politically, but also in terms of benefiting the individual citizens and communities of each respective country.

Evaluation of Export Potential of Ricebean to Canadian Ethnic Markets

Satisfies Niche-to-Medium Sized Ethnic Markets viz. Immigrants

With the increase of immigrants to Canada each year, there has been a correlative relationship with the demand for foreign export-particularly produce (Asia Pacific Foundation). The continuation of new immigrants to Canada

assures a demand for ethnic foods; therefore, there will be a higher demand for climbing Ricebean—especially if work is done to increase yields, and encourage farmers to grow it. Ethnic minorities will, however, not be the only market that will benefit from the export from this product. With the increase in demand of North American consumers for an increasing desire for ethnic foods e.g. the recent trends for Quinoa, Cous-cous, lentils, etc., market trends favour an increase in climbing Ricebeans as well.

Revenue Generation for Asian-Canadian Importers

Some of Canada's largest Asian importers, Anchor Foods International (Contact Information: info@anchorfoods.net), Le Kiu Importing Co. Ltd. (Contact Information: info@lekiuimporting.com), and Sun Wah Foods (Contact Information: info@sunwahfoods.com), have seen a consistent rise in ethnic foods for continuously developing and expanding local Asian markets in mid to large size cities in Canada (Sun Wah Foods). This entails an increase in demand for South-Asian (including Nepal) locally grown food. With the recent trends towards consumerism favouring ethnic foods, the demand for climbing Ricebean will continue to rise in Canadian cultures.

Grocery Distributor Executive Confirms Trending Pattern for South-Asian Ethnic Produce

In conversation with Ralph Von Weiner of Flannagan Food Service – the largest Canadian owned, independent foodservice distributor in the country – he maintained and confirmed the trajectory of the recent trends favouring varieties of ethnic foods. Von Weiner has also voiced his opinion stating that “I have been seeing a rising trend in this type of thing [including hanging Ricebean], for over a decade now.”

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