AVRDC’s bitter gourd lines perform better in Bangladesh

Bitter gourd is an important vegetable in Bangladesh, where nearly 10,000 ha of this nutritionally-rich cucurbit are cultivated annually and mainly grown in the hot season. Bangladeshis are aware of the medicinal properties of bitter gourd, especially its role in managing type 2 diabetes. Nearly 10% of Bangladesh’s population is affected by diabetes and according to the International Diabetes Federation the prevalence will be 13% by 2030. Farmers plant bitter gourd in
February and harvest the fruits in April to May. Off-season bitter gourd is planted in November and fruit harvesting commences in January. However, most farmers plant low yield potential and open-pollinated varieties, harvesting only 5 t/ha on average.

To improve the bitter gourd yield potential, the Bangladesh Agricultural Research Institute (BARI) initiated a strong bitter gourd breeding program and introduced AVRDC’s improved bitter gourd lines in 2013. Field evaluation trials were further conducted in the hot and cold seasons of 2014-2015. Lines AVBG1301, AVBG1330 and AVBG1334 were selected for their higher yield performance in the hot season (17-21 t/ha) and will be further evaluated in the hot season of 2016 through regional yield trials (RYT) over locations.

The Research Evaluation Committee of BARI selected AVBG1301 as a future open-pollinated variety for Bangladesh for hot season cultivation. Lines AVBG1324 and AVBG1330 were selected for conducting off-season winter RYT. Line AVBG1334 was observed to be resistant to powdery mildew, while other AVRDC lines (AVBG1301, AVBG1324 and AVBG1330) were rated moderately resistant. Local check variety BARI Karala 1 was evaluated as susceptible to powdery mildew.

“I have started using these AVRDC promising lines in BARI’s bitter gourd heterosis breeding program,” said Dr. M.A.T. Masud, principal scientist leading the bitter gourd breeding program in the Vegetable Division, Horticulture Research Center of BARI. With the infusion of AVRDC’s superior germplasm, better bitter gourd will soon benefit farmers and consumers in Bangladesh.

**Source and photos:** Narinder Dhillon, Supannika Sanguansil, AVRDC – The World Vegetable Center East and Southeast Asia, Thailand
Summer country bean cultivation raises farm income in Bangladesh

Country bean (*Lablab purpureus*) is one of the most important leguminous vegetables in Bangladesh and is normally grown during the *rabi* or winter season. Around 12,000 ha are cultivated and 50,000 metric tons of pods are produced every year. Country bean is rich in protein and can be grown easily on roof tops or trellises. In addition, it is delicious and can enrich soil fertility. Therefore, its cultivation is a century-old practice for Bangladeshi farmers and home gardeners. However, the traditional local varieties have a prolonged vegetative period and poor yield potential, and are often infected with mosaic virus disease. The peak harvesting season for local varieties is in winter and oversupply is common in the markets. This results in sales at low prices, which are not enough to compensate the production cost.
Heat tolerant country bean Usha (left), Borsha (right) and larger fruited Maya (below) were developed by BARDC Agricultural Research & Development Centre and released to farmers for off-season production.

However, the demand for country bean is high during the off-season and the price is 3-4 times higher than in winter.

Country bean can withstand excessive soil moisture and temporary waterlogging. Therefore, when summer-adapted country bean varieties are released commercially, farmers in low-lying areas plant them on soil heaps or raised beds in waterlogged land with trellis support during the late monsoon season. Due to lower supply and higher prices in the markets at that time, farmers earn more income from this innovative practice. In addition, the cost of many farm supplies have increased recently so farmers tend to plant vegetables during the off-season for higher profits.

To develop suitable country bean varieties for cultivation in the monsoon season, BRAC Agricultural Research & Development Centre (BARDC) launched a summer country bean development program in 2002. So far, five summer country bean lines have been developed, named Usha, Borsha, Broad purple fruit, Broad green fruit and Maya. These lines are heat and virus tolerant and are becoming popular in commercial production areas in Bangladesh. It is expected that the availability of country bean in the market will be extended to 9-10 months from only 4-5 months at present. It is also expected that in a few years country bean will be one of the major fresh vegetables in the market during the monsoon season.

Source and photos:
Sitesh Chandra Biswas, BRAC Agricultural Research & Development Centre (BARDC), Bangladesh