

## Present Status of Common Bean (*Phaseolus vulgaris* L.) Cultivation in Uva Region

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### Introduction

Common bean (*Phaseolus vulgaris* L.) is one of the major and very popular vegetable crops in Sri Lanka, which is having a long tradition. It belongs to the family Leguminosae and genus *Phaseolus*. Among all the vegetable crops grown, bean takes a very important place as the second most important vegetable crop grown in Uva region. There are many bean genetic resources available in Uva region because 2/3 of common bean cultivation is done commercially in this region (Department of Agriculture, 2011). Thus this research was conducted to understand the current status of the common bean cultivation and to identify the bean cultivars grown in Uva region.

### Methodology

This study was conducted in Bandarawella, Badulla and Welimada areas in Uva region from June to July in 2012 in two stages. In the first stage, literature and secondary data were collected to identify the present common beans grown areas. In the second stage a survey was conducted by direct interviewing with farmers using structured questionnaire to understand the present status of common bean cultivation in Uva region. 250 farm families were selected randomly and data were collected in 67 randomly selected villages in all divisions of Uva region. The questionnaire was pre tested in Hali Ela and Bogahamadittha areas and revised.

### Results and Discussion

In Sri Lanka common bean is mainly cultivated in Badulla, Matale, Nuwaraeliya, Kandy and Monaragala districts. Table 1 shows the extent and the production of beans in these districts.

Table 1: Extent and the Production of Beans as a Percentage in Year 2010

District	Extent		Production	
	ha	%	mt	%
Badulla	3132.56	47.1	21709	58.88
Nuwaraeliya	1645.00	24.73	6021	16.33
Kandy	1192.00	17.92	5707	15.48
Matale	648.98	9.76	3357	9.10
Monaragala	31.6	0.48	75	0.20

Source: Census and Statistics Report, 2010

The highest bean production and the extent is in the Badulla district which is around 58.88 percent. In Badulla district three zones were identified as the highest bean cultivating areas such as Badulla, Bandarawella and Welimada. These 3 zones consist with 25 Agriculture

Instructor (AI) divisions. 12 AI divisions were identified as the highest bean cultivation areas (Table 2).

Table 2: Extent and the Production of Common Beans in Different AI Divisions

	AI division	Extent (ha)	Production (mt)		AI division	Extent (ha)	Production (mt)
01	Bandarawella	450	77	07	Kappetipola	145	24
02	Sapugolla	300	51	08	Bogahakumbura	132	23
03	Hali Ela	300	47	09	Dambawinna	125	21
04	Ettampitiya	225	39	10	Rambukpotha	70	12
05	Diyathalawa	205	35	11	Kumbalwela	65	11
06	Kotavara	200	34	12	Ballakatuwa	50	9

Source: Unpublished data from Govi Jana Seva Centres

Table 2 represents the extent and the production of each AI division. Bandarawella, Sapugolla, Hali Ela, Ettampitiya, Diyathalawa and Kotavara AI divisions consist with the highest land extent and the largest production compared with the other divisions.

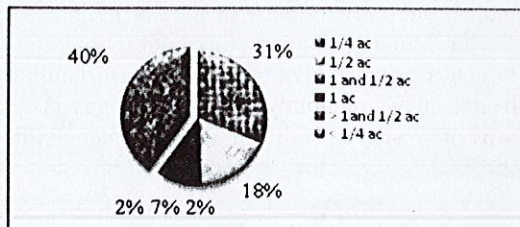


Figure 1: Extent of Common Bean Cultivation in Uva Region

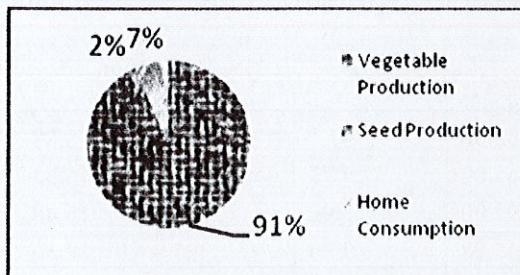


Figure 2: The Purpose of Cultivation Beans in Uva Region

The land extent used for the bean cultivation by an individual farmer varies based on water availability, total land area owned and crops grown in same season (Figure 1). 40% of the farmers utilize less than 1/4 of acre while 31% of farmers utilize 1/4 acre for the bean cultivation. 91% of the farmers produce commercially bean as fresh vegetable and 7% of farmers produce the bean for seeds (Figure 2). It reveals that the most of the farmers are

involved in small scale commercial bean production as fresh vegetables in less than ¼ acre to ¼ acre land.

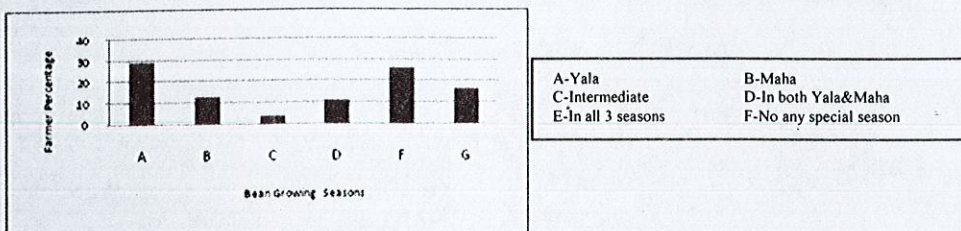


Figure 3: Cultivation Pattern of Beans in Uva Region

Figure 3 shows the bean cultivation pattern in Uva region that varied largely with growing seasons from area to area. 29 % of farmers cultivate beans in *Yala* season while 26 % farmers cultivate beans in all 3 seasons and more over 16 % of farmers cultivate beans with out considering the season.

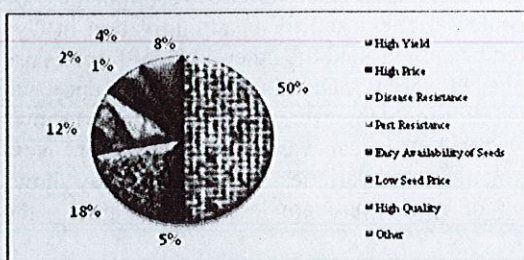


Figure 4: Reasons to Select Specific Bean Seed Varieties

Figure 4 shows the reasons to select different bean seed varieties for the cultivation. According to the 50 % of farmers opinion that they select mainly based on the yield. 18 % farmers consider the disease resistance while 12 % farmers consider the pest resistance when selecting bean cultivars.

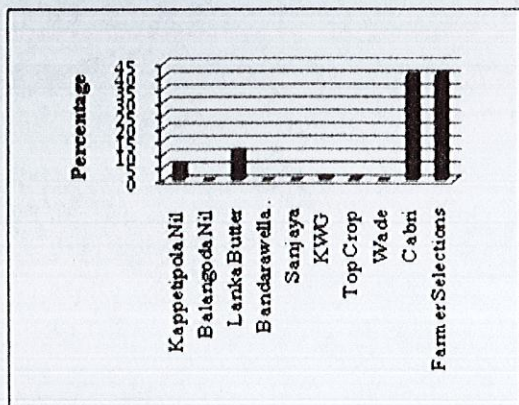


Figure 5: Local Bean Varieties Used by the Farmers

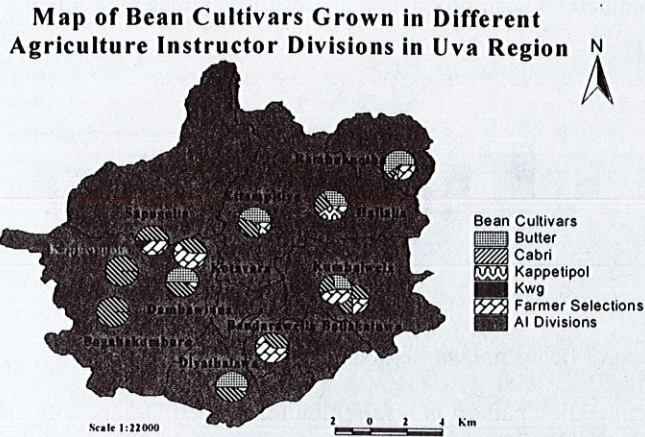


Figure 6: Map of Bean Cultivars Grown in Different Agriculture Instructor Divisions

Figure 5 shows the different local bean varieties such as bean varieties recommended by Department of Agriculture and farmer selected varieties used for bean cultivation in Uva region. 40% of farmers use their own selected bean seeds and the other 40 % of farmers use variety *Cabri* which is also a farmer selected variety. Distribution of different bean cultivars grown varied from AI division to AI division. However, the map (Figure 6) shows that *Cabri* is the most preferred and highly distributed bean variety in Uva region. Next preferred and highly used bean seeds are farmer selected varieties. The present study shows that recommended varieties by Department of Agriculture are less popular among the farmers.

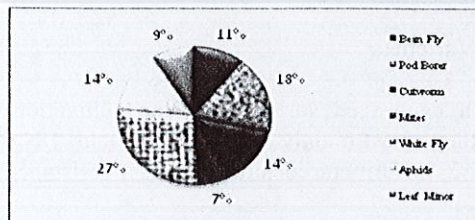


Figure 7: Distribution of Bean Pests in Uva

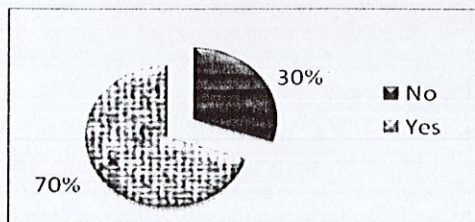


Figure 8: Distribution of Bean Diseases in Uva

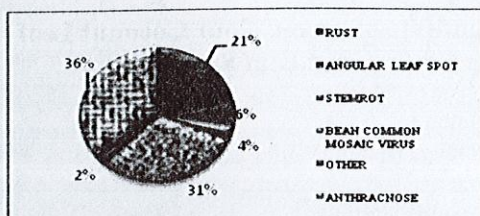


Figure 9: Availability of Seed Collection with Farmers

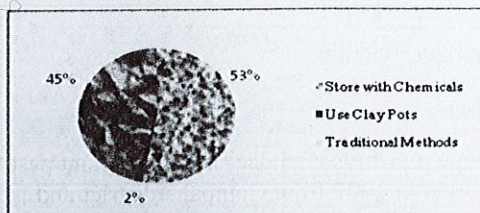


Figure 10: The Methods Used to Conserve Seeds

Ariyaratne (2005) reported that the bean fly, bean pod borer, cut worms and mites are the major pests in the bean cultivations; however present study shows that the distribution of white fly(27%), pod borer(18%), aphids(14%) and cut worm(14%) are high in Uva region (Figure 7). Figure 8 shows that the distribution of diseases. Anthracnose (36%), Bean mosaic virus (31%) and rust (21%) are highly distributed diseases.

Figure 9 shows the availability of the seed collection with farmers. 70 % of farmers have their own seed collection. 30 % of farmers do not have their own seed collection and they buy their seed requirement in every season. In considering seeds 53 % of farmers use chemical powder to store seeds until they use it and 45 % of farmers use traditional methods such as mixing of Neem leaves, Neem leaf powder, dried chili pods, ash and citrus leaves.

## Conclusion

Most of the farmers in Uva region involve in small scale commercial bean cultivation as fresh vegetables and bean seed production. Farmers prefer to use their own selected seeds. The most popular and distributed common bean variety among the farmers in Uva region is *Cabri*. White fly, aphids and leaf minor are identified as the severely damaging pests and Anthracnose and bean mosaic virus are the major diseases in the bean cultivations in Uva region.

## References

Ariyaratne, H.M., 2005. *BonchiWagawa*, WishvaLekha Publishers, Ratmalana Department of Agriculture (2011), *Agstat; Pocket Book of Agriculture Statistics*, Socio Economic and Planning Centre, Department of Agriculture. (Vol:VII).