



SHORT COMMUNICATION

A note on the amendments to descriptor list of Lentil (*Lens culinaris* Medik.)

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ABSTRACT

The article presents suggestions to modify the descriptor list of lentil which is in vogue. Based on the field evaluations, it is suggested to amend the plant growth habit. It is suggested to include three categories under the plant growth habit. The categories under tendrils into three classes-absent, rudimentary and prominent. It is suggested to include leaf colour as a characterization data.

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INTRODUCTION

Plant descriptor list helps breeder in describing his material in such a way that it will help identify a genotype distinctly. In the world of IPR (Intellectual Property Rights), it is all the important that the descriptor list should be as accurate as possible so that, each variety, line is described in such a way that it becomes easier to identify (Chaudhary et al. 2014).

Molecular markers are the ultimate, however, in several crops they still have to be standardized.

MATERIALS AND METHODS

This study was undertaken at Rajasthan Agriculture Research Institute, Durgapura, Jaipur as well as at ARS, Kota, Rajasthan in the month of Feb, 2014 of the 2013-14 Rabi season. The advanced breeding lines of lentil maintained at Rajasthan Agriculture Research Institute, Durgapura, Jaipur and the entries of IVT and AVT are used in this investigation. The materials were evaluated in three rows with 22.5 cm row to row spacing and 5cm plant to plant spacing. Standard color chart of a commercial paint company which shows shades of green was used for classification based on leaf colour.

RESULTS AND DISCUSSION

In lentil, the descriptor list was originally published in 1985 jointly by IBPGR and ICARDA (IBPGR, 1985). There are three parts in this descriptor list-passport data, characterization data and evaluation data. The characters which form true basis for characterization data are seedling stem pigmentation(4.1.1), leaf pubescence(4.1.2), leaflet size(4.1.3), tendrill length(4.1.5), flower ground colour(4.2.3), pod pigmentation(4.2.4), ground colour of testa(4.3.3), pattern of testa(4.3.4), colour pattern of testa(4.3.5) and cotyledon colour(4.3.6). The numbers 4.1.1. to 4.3.6 refer to the item number in the lentil descriptor list of IBPGR (presently Bioversity International), Rome.

Plant growth habit in the 2009 list (Sarker et al.2009), 6 categories of plant growth habit are proposed as given below-

- Prostrate
- Semi-prostrate
- Intermediate
- Upright

Errect and 99= Other(Any additional information may be specified here, i.e. mixed, specify in the descriptor Notes).

On close scrutiny of all the germplasm lines, categorization into 6 categories as listed above appears to be confusing. Moreover, it becomes difficult to actually divide them into prostrate, semi prostrate and intermediate, similarly it becomes difficult to classify in to upright and erect. The following changes in the characters listed above as well as some new characters are proposed.

It is proposed that the plant growth habit can be safely groupd into three distinct groupes-

- Bushy
- Semi erect
- Errect

The same are depcted in Figure 1 and 2. Presence or absence of tendrils is another important character in lentil. The IBPGR descriptor list groups the presence or absence of tendrils into two categories- rudimentary and prominent. Instead, it is propsted to create three classes under this category-

- Absent
- Rudimentary
- Prominent



Figure 1. Plant growth habit. Top left erect, middle semi erect and right bushy.



Figure 2. The three plant growth habits in the field (stating from left bushy habit, followed by semi erect and erect (third row)).

The same are depicted in Figure 3. Besides the above, another character that can be used in characterization is the leaf colour. Different shades of green are seen in lentil. Further, the presence of glabrous hairs changes the perceivd colour of the leaves. Any standard color chart of a commercial paint company which shows shades of green can be used for classification based on leaf colour. Generally two categories of green and one shade of grey are the commonly observed colours in lentil germplasm. Accordingly the following categories are proposed for the leaf colour.

- Deep green
- Light green
- Grey

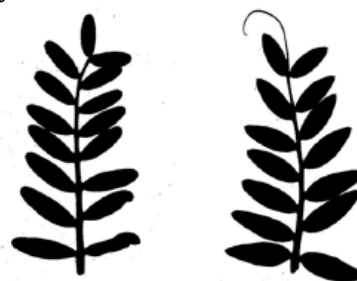


Figure 3. Absence of tendrils (left) and prominent tendrils(right)



Figure 4. Using colour chart to know the leaf colour

The same are depicted in Figure 4 and a field view given in Figure 2. In Figure 2, starting from left, the first row has grey shade, the next two rows have dark green colour, the fourth row has grey colour, while the next two rows exhibit light green colour. IVT is expected that inclusion of these characters in the descriptor list of lentil will make characterization more distinctive.

CONCLUSION

The present study offers suggestions for improving the lentil descriptor list, which is currently common. It is recommended that the plant growth habit be changed based on field evaluations. This study also proposed that the plant growth habit be divided into three groups.

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