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## **COMMON BEAN (*Phaseolus vulgaris* L.) CULTIVAR EVALUATION BY FAMILY FARMERS**

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### **INTRODUCTION**

In Rio Grande do Sul (RS) State, in Southern Brazil, family farming is responsible for about 70% of common bean production (Villela et al., 2016). Common bean production in the State can be referred to according to the twelve Emater, the official extension institution, administrative regions. In order to get common bean farmers acquainted with new released cultivars, in the early 90s, the Embrapa Temperate Climate with the contribution of Emater put in place the Common Bean Demonstration Units System – SUDF (Villela et al., 2016). Simultaneously, the SUDF had as additional goal to minimize the effects of genotype x environment interaction, since the evaluation was carried out at the farmers' fields, from which the most suitable cultivars could be selected.

This paper, which comprehends the results from experiments conducted at Emater's Pelotas region and sums up to the results obtained from the experiments developed at the Emater's Soledade region in the State of Rio Grande do Sul, contributes to the understanding of the behavior of the tested cultivars under different environmental conditions under farmers' management, according to their adaptation to these conditions.

### **MATERIAL AND METHODS**

Methodology follows the description by Villela et al.(2016), where the Demonstration Unities (UD) were composed of seventeen cultivars already recommended by research institutions located in Southern Brazil, as well as by the cultivar in use by the farmer, as check. In the region of Pelotas, located in the South of Rio Grande do Sul, 31.7654° S, 52.3376°, the Emater's administrative region comprises 21 municipal offices, from which 14 carried out 49 UD's. The testing period spread from 1993/94 to 2011/12. UD's, for the most part, were installed in properties of farmers selected by Emater / RS employees. Statistical analysis involved the analysis of variance for the variable grain yield and the Dunnett's test mean comparison having the farmer's cultivar as term of comparison. For Pelotas' region, fourteen of the seventeen cultivars presented the required amount of data for statistical analysis.

### **RESULTS AND DISCUSSION**

As shown in Table 1 for the fourteen SUDF cultivars tested, no significantly differences were detected for the cultivars and the farmer's cultivar (check) comparison. Since the Embrapa Temperate Climate headquarters is located at Pelotas, it might be thought that farmers had the opportunity of adoption of the new cultivars at a high speed rate, what would result in one of the UD's cultivars becoming a check cultivar (farmer's cultivar), for which the differences in yield would appear of low magnitude. At the same time, it can be seen that the cultivars with seed coat colors that no black namely Carioca, Iraí, Iapar 31 and Pérola, can be adopted by famers with no significant yield losses as compared to the black seeded ones.

**Table 1.** Mean grain yield (kg.ha<sup>-1</sup>) and releasing year of SUDF cultivars in comparison to farmer's cultivar. Emater /RS' Pelotas region, RS, Brazil.

Cultivar	Grain yield (kg.ha <sup>-1</sup> )	Releasing year
Farmer's cultivar (check)	1,738.3	variable
Rio Tibagi	1,724.0	1976
Carioca+	1,811.1	1976
Guateian 6662	1,973.2	1979
Iraí+	1,869.1	1981
Macanudo	1,962.3	1989
FT 120	2,017.4	1989
Minuano	1,943.1	1991
Iapar 31+	1,835.6	1994
Macotaço	1,867.7	1994
Iapar 44	1,553.7	1994
Guapo Brilhante	1,689.3	1995
FT Nobre	1,803.1	1996
Pérola+	1,854.5	1999
Diamante Negro	1,414.9	1999

\* Cultivar differs from the check by Dunnett's test at  $\alpha=0,10$ .

+ Cultivar with no black seed coat

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