

PROJECT - SELECTION OF BEAN CULTIVAR (*Phaseolus vulgaris* L.) TO SOIL ACIDITY TOLERANCE

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Exactly with the development of Brazilian agriculture, one of the constraints to the agricultural exploration is soil acidity, as much in traditionally cultivated soil as in new areas in agricultural expansion. Brazilian researchers have been esteemed that 80% of Brazilian soil are acid, presenting raised aluminum concentration and, in lesser scale, iron and manganese. These elements harm the development of crops with consequences in such a way in the top plant how much in root system. In the root, where the plant tissue keeps in direct contact with the soil acidity, the low plant development harms the absorption of the majority of mineral nutrients.

The soil acidity can be amended with lime application, but nor always the liming practice is carried at the time and in way correctly. For this reason, the Center – West region, is harmed, a time that suffers the highest consequences of the process of agriculture expansion. The lime application for soil amendment is a practical routine in national agriculture and that is evolved very deeply, with the machine modernization. However, with the diffusion of no till system in the country in last the 20 years, without the soil revolution, the traditionally productive varieties in areas of high fertility and genetic breeding ones present hardness to adapt in all spread acid soil areas in the country.

The no till system, practical responsible for the sustainable exploration of the Brazilian savanna, does not allow the lime to be carried through sub - superficial layers. Thus, the plants of annual crops, whose cycle of development reaches only from 60 to 120 days, do not reach full development in enough time for the stabilization of soil fertility. Two ways to adapt plants in acid environments are the use tolerant crop to acid environment to wait the necessary time for crop implantation in amended area.

The harmful effect of aluminum in the plants, in general way are similar for all the crops. The intensity of the effect, however, varies with the species, varieties and plant age. The sensible plants to aluminum generally accumulate phosphorus in their tissues not making use of exactly in the metabolic process. The phosphorus is precipitated in the root and therefore it becomes unavailable for the development of the plants. Beyond phosphorus, the calcium concentration is reduced in vegetal tissue. Research carried by Embrapa Rice and Beans has shown that the use of inferior amounts to a one ton of dolomite lime is important to supply plant needs in calcium and magnesium. For neutralization of soil exchangeable aluminum four tons of this same lime has been recommended.

For higher knowledge, a project of selection for acid soil tolerant cultivars is proposed objecting to know, to select and to multiply tolerant lines/cultivars to environmental acidity. Productive cultivars in daily pay launching, created by plant breeding will be submitted to selection test for acid soil. The plants will be developed in savanna condition, in oxisol soil of low fertility that will receive two doses from dolomite lime, 1 and 4 t/ha, receiving fertilization basic in accordance with the official fertilizer recommendation. The plants will be harvested when the first cultivar to launch the first floral button. Plant height, total dry matter production, leaf area, top and root dry matter will be observed to be evaluate as tolerant cultivar to acid soil.

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