INTRODUCTION

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String bean, ***Phaseolus vulgaris L.,*** is a new cultivar has a good potential to be exported and there is a great demand on it especially from the European comunity. The export of this variety becomes very important to increase the national revenue. The export of string bean depends on the quality of the produced pods. For obtaining good quality and thus high income return from the exportable beans, efficient nitrogen fertilization systems and the best method of irrigation must be assessed.

Efficient fertilization systems require the knowledge that any fertilizer component usually affects several other nutrients besides that applied. Thus it is important to determine the nutritional consequences of fertilizer application. On the other hand, in some situations fertilizer may not be available or may be too costly for use. In such cases, soil nitrogen may be supplemented by the use of legumes in crop rotation schemes.

Little is known about nutrient requirements for new cultivars of ***Phaseolus vulgaris*** because the levels of nodulation and nitrogen fixation are variable and are low under our Egyptian conditions. Therefore it was valuable to determine the best source of nitrogen as well as the best method of application on growth and yield of string bean Garonel, cultivar.

The string bean, ***Phaseolus vulgaris L.,*** is one of the new and most important leguminous crops allover the world. It is also known as "Filet" beans. These new varieties alone produce a high percentage of straight pods in the Extra-Fine grades. It is meaningless to state a yield for string beans without specifying the grade, since the dollar value of the pods decreases as the pods become larger and more mature; viz.; a yield of 5 ton per feddan made up of 100% Bobby grade will be completely unexportable (the pods

will be full of threads), wherears a yield of 3 ton per feddan made up of 70% Extra and 30% Fine will give a good income return.

For the export of the fresh production, pods are divided into three categories: 1. Extra grade (diameter of 7.3 mm or less), 2. Fine grade (diameter between 7.4 mm and 8.3 mm and 3. Bobby grade (diameter greater than 8.3 mm). Crop values for the beans reflect pod diameter. They were calculated from prevailing prices of $ 334/MT for pods with diameter less than 8.3 mm and $ 160/MT for larger diameter pods. The equation for pod value as reported by Stansell and Smittle (1980) was: $/ha = MT/ha (77.16 P/100 + 71.65). Where P equals the percent of pods less than 8.3 mm. The area and production of beans in A.R.E. during the last three years are shown in table (1).

The objectives of this study were to (i) estimate the response of string bean (***Phaseolus vulgaris***) plants to inoculation and nodulation relationship under our Egyptian conditions and (ii) investigate string bean preference for nitrogen source, rate and method of application in relation to obtainment the highest possible commercial export yield in the Extra-Fine grades which enjoy the best market prices..

Table (1): Area and production of beans (***Phaseolus vulgaris***) during 1990-1992.

Year	Snap bean		Dry bean	
	Area (fed.)	Production (ton)	Area (fed.)	Production (ton)
1990	29233	122748	22886	23618
1991	32254	147644	29289	31342
1992	30053	128868	22681	20182