Introduction
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French bean (*Phaseolus vulgaris* L.) commonly known as Rajmah/Rahmash/Kidney bean/Dry bean/Field bean and it is gaining more popularity in Indian diet. It is multipurpose crop because of its green pod and dry seed both are used as vegetable purposes. This crop with its good appearances, taste and nutritive values has become favorite in developed and under developing countries in the world. In India, there are tracts where French bean is cultivated in a large scale and also used for different culinary and vegetable purposes.

On the basis of 100 g edible portion of fresh pods. French bean, contains 91.4 g water, 0.1 g fat, 1.8 g fibre, 1.7 g protein, 0.5 g minerals, 4.5 g other carbohydrates, 28 mg phosphorus, 4.3 mg sodium, 0.21 mg copper, 26 calories, 221, I.U. vitamin A, 0.06 mg riboflavin, 14 mg vitamin C, 50 mg calcium, 29 mg magnesium, 1.7 mg iron, 120 mg potassium, 37 mg sulphur, 0.08 mg thiamine, 0.3 mg nicotinic acid (Choudhury, 1990).

The dry seeds of this crop contain about 21.1% protein, 1.7% fat, 69.9% carbohydrates besides, 381 mg calcium, 425 mg phosphorus and 12.4 mg iron per 100 g of edible part (Ali and Kushwaha, 1987).

India is vegetarian country, which stands second in population in the world. Most of the people are vegetarian and supplied their nutritional demand through various kind of vegetables. Among the vegetable crops, French bean crop is a largest single unit in which seeds very rich in protein and other minerals. Therefore, the protein rich grain legumes have
a special importance in the country. Leguminous vegetables are cheapest and the best source of protein constituting about 27% of total dietary protein in our country (Swaminathan, 1937).

To meet the requirement of mineral, vitamin and protein for increasing population it is imperative to increase fresh pod and seed production of French bean crop which is useful for human consumption. In French bean there are several varieties, which are short duration therefore, they can be easily included in crop rotations and intercropping.

French bean is most important leguminous vegetable crop. Phaseolus beans are among the oldest established crop plants and radio carbon dates show that P. vulgaris was domesticated in central America about 7,000 year's ago. The chromosome number is $2n = 22$. The variety Contender is introduced from America. The plants have dwarf, bush growth habit and heavy bearer. The pods are roundish and fibre less. It is early maturity variety and resistant to leaf hopper. This variety is suitable for hills of U. P. and also the northern plains.

The leguminous vegetables in nature bear nodules on their roots, which fix the atmospheric nitrogen and leave the fixed nitrogen in available form of the succeeding crop as residual but French bean does not nodulate. On account of this, French bean crop needs heavy dose of nitrogen application. Phosphorus is also require heavy dose because it hastens the maturity of crops, promotes root development, improves the quality of the crop, increases resistance to diseases and increase the uptake of nitrogen as well as to balance the extra growth caused by N application. Potassium is said to interact ill effect of
excess N application and increases yield, which tend to prevent hardness of the seed coat.

Lack of nitrogen shows; plant dwarfs, leaves small, pale green, older leaves pale yellow turn brown with eventual shedding, poor formation of flower and pods. Phosphorus deficiently shows; stunted growth, leaves dark green, older turn yellow with green patches, petioles and leaflets tilt upwards, delayed formation of flowers and pods in bean.

The production of French bean influenced by various factors such as climate, soil, fertilizers and agro-techniques, including seeds. Inspite of this, good seed is very essential to success in production of French bean. The most careful and efficient farmer can not achieve success with the use of poor seed, even if he gives the closest attention to all other factors. Among the other factors, nitrogen and phosphorus fertilizers are paramount importance for getting high production of French bean.

The balance doses of major fertilizers like N, P and K are considerable factors for improving the quantity and quality of seed of French bean as reported by several workers. But informations on these aspects are meagre for the agro-climatic conditions of Eastern U.P., particularly under Varanasi conditions. Keeping all these facts in view the present investigation entitled "Effect of different levels of nitrogen and phosphorus on growth and yield of French bean (Phaseolus vulgaris L.) cv. contender" has been planted with the following broad objectives:

1. To study the suitable dose of nitrogen and phosphorus for better growth and seed yield.
2. To work out the interaction effect of nitrogen and phosphorus on growth and seed yield.

3. To assess the economic feasibility of various treatments.