Effect of different doses of the hormone gibberellins acid on the process of protein changes in bean plants

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Abstract Due to poor land of Khuzestan and land pollution due to application of chemical fertilizers, use of materials that can no harmful effects on the environment, planting with very low doses, had positive effects on plants have quality performance, it seems necessary. Why research in this area in order to affect hormone levels and time use gibberellins acid (GA3) on the process of change and increasing amounts of protein bean seeds, bean seeds to increase the quality performance (Vicia FabaL.) were performed. The research farm located in the city Hamidieh hashemi research during the season and in 2010 was done, figure used in this experiment using BARAKAT variety. Use design was factorial experiments in randomized complete block design with three replications. Factors tested included four concentrations of the hormone gibberellins acid: (no hormones = d_0, d_1 = 5 ppm, d_2 = 50 ppm and d_3 = 250 ppm) and the second factor the third period, hormone sprayed: (phase of eruption = s_0, Flowering = s_1 and phase pod set = s_2), respectively. Measuring grain protein levels indicated that the hormone gibberellins acid spray treatment growth period increased grain protein and the greatest amount of protein in the amount of treatments d_2s_0 d_1s_0 and 29.28 percent, respectively. . [♂Somaye ghalandari, Tayeb Saki Nejad, Shahram Lack. Effect of different doses of the hormone gibberellins acid on the process of protein changes in bean plants. Journal of American Science 2011;7(6):45-49]. (ISSN: 1545-1003). http://www.americanscience.org.

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1. INTRODUCTION

The seed storage proteins are N, polymeric amino acids that are bound together by peptide bonds have been necessary for seedling growth are 20 types of proteins are composed of amino acid, all of which exist in nature. Of being more or all amino acids together different protein molecules there are so very large molecules, proteins, complex and high molecular weight and their chemical diversity is limited, if sometimes crude protein as protein is used instead of why crude protein, protein compounds that also encompasses. And this figure is the same method of calculation Kjeldal nitrogen and beat up the conversion ratio, usually 6.25 is obtained. The grief can simply use value crops such as cereals and legumes to supply enough energy is so, can the amount of protein required and sufficient to meet the body, in addition to protein quantity and value, quality and biological value must also be considered.

Important Prvlamynhay Zyyn in cereals including maize, wheat gliadin in the atmosphere is Hvrdyyn. Glvtlynhay some important crops include maize Zkayyn, glutenin in wheat, barley and Avryznyn Hvrdnyn in the rice, some of the major globulin in seeds include legumes legumin, Veisi Lane, Glysy Nin, and Rashyn Vygnyn. in germination, proteins into amino acid hydrolysis and are then transferred to the embryo axis to be there with a new composition and protein taken together constitute Make a mix of amino acids is balanced. For this reason, buds and seeds with high protein quality are excellent and in large quantities are used in human food, because seeds of cereal protein are substantially in the food industry, as a puree in food manufacturing, such as used Noodles.

Plant hormones that regulators are produced by the plant and within plant normally produces from the impact transferred to the place, where they affect physiological processes. So the hormone regulators are naturally found in plant while in general, regulators can also be natural and synthetic hormones, so all are not. Configuration is based on work that they do their names are different, such as hormones, growth and flowering material (2).

Currently the world's five groups of known plant regulators, many of which have practical applications in agriculture are large and important. These groups are: is auxin, gibberellins, the cytokenin, the ethylene, inhibiting substances (Asfanva, 2008)

2. Material and Method

This test Crop year 2010 on the farm located in the village of Sayed Hossein HASHEMI Hamidieh city was conducted.

Place testing semi arid dry climates and low temperatures are 4 - and the highest degree of temperature 51.8° C, average annual temperature in the station 23.9 ° C has been reported.

The statistical test of the factorial design are equally important in terms of factors examined in a randomized complete block design with three replications was.

D: Different concentrations of the hormone gibberellins acid.
S: Bean plant growth in different periods.

(d0 =No hormones, , d1 = 5ppm and d2 = 50ppm and d3 = 250ppm (and the second factor for three phase bean plant growth hormone gibberellins acid spraying include: (s0 =vegetative phase, s1 = flowering phase and s2 =phase Pod set)

To review the growth and dry matter accumulation bean plants were sampled action. Sampled from all plots to 15 days away from each other during the eighth stage was performed. Three lines for the sample was determined after removal of the top 50 cm Down each line as sidelines, three plants randomly taken from each plot and the plastic bag with a label to each plot and samples were transported to the laboratory and measured.

At the end of each growing season, seed treatment to measure 20 grams protein seeds Kjeldal method to estimate the elements were sent to specialized laboratories.

3. Result
Percent Protein
Of bean plants are important sources of protein, more protein in the leaves of beans and seeds are collected and globulins been more than kind and amount of amino acids cysteine, glutamic acid, arginine and ammonia nitrogen that is less, dependent on the nitrogen percentage Protein has a higher protein nitrogen everything will go well above (5).
Gibberellic acid at a dose level of 1 percent is significant, the different developmental courses of any level is not significant, dose interaction gibberellic acid and different periods of growth at 1 percent is significant (3).
Doses of 5 and 50 and 250 ppm compared to the control levels were statistically a higher protein value.
Long period of vegetative growth before flowering with (28.98 percent protein) has the highest percentage of protein and were in a statistical level, the rest period of growth in the levels were statistically lower levels.
The interaction of dose and period of growth hormone on protein and nitrogen developmental growth period before flowering and the dose of 5 and 50 and 250 ppm respectively, with values 29.97 and 29.83, and 30 percent of the highest statistical level, a comparison Others have gained and (Chart 1,2).

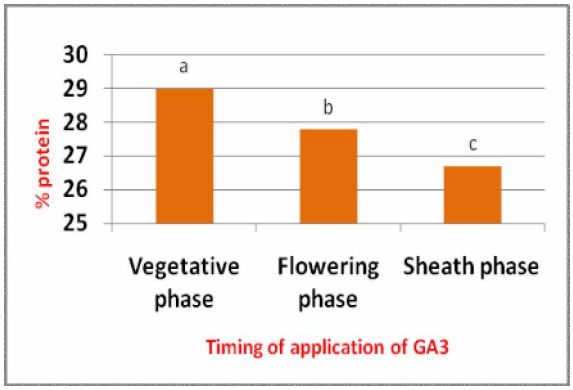

Fig1. Effect timing of application of GA3 on % protein

Perhaps because the hormone synthesis and plays a role in attracting more Assimilate protein, followed by large amounts of protein.
With the above results and by Shft and Shabana Ullah and colleagues reported that the GA is an effective role in protein synthesis and cell enlargement are the hormones produced in the fruit seeds and sprayed it increases the quantity and quality of fruit is (15).
Combinations of growth hormones and regulators through increased construction activity RNA and RNA polymerase proteins, the rate of construction increases was consistent (17).

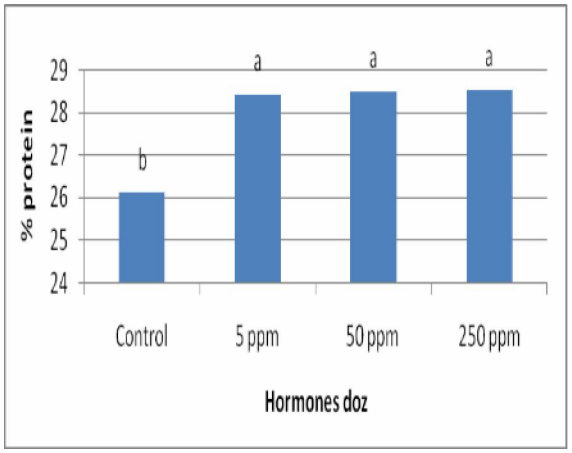

Fig2. Effect hormone doz GA3 on % protein

Percent nitrogen
Structure of protein synthesis and amino acid nitrogen than is the main protein that whatever goes up BFM high nitrogen and high in protein will be gone (small building).
Dose Hormone Gibberellic acid at 1 percent is significant, the hormone acts on the percentage of time means nitrogen is the interaction of different doses and periods of growth hormone level is a significant one in (Table 4-3).

effect of dose on the percentage of nitrogen, all doses of 5 and 50 and 250 ppm respectively, with values of 55 quarters and 56 quarters and 50 quarters at the level of statistical a are located only control treatment is that in statistical b is located.

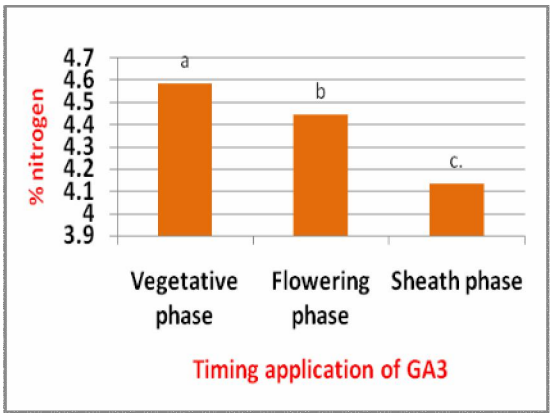

Fig3. Effect timing of application of GA % nitrogen

Effect of hormone actions in the time period before flowering eruption rate 4.58 percent nitrogen was in statistical and developmental courses set pod up gradation value 4.31 percent were located in c statistics. The interaction of hormone dosage and time of hormone actions vegetative growth before flowering period with a dose of 5 ppm and 50 ppm respectively, with values of 79 quarters and 4.80 percent were in a statistical treatment and control without taking hormone with 4.18 percent statistical level f is the lowest level was statistically.

The nitrogen and protein are dependent; high-protein nitrogen will rise.

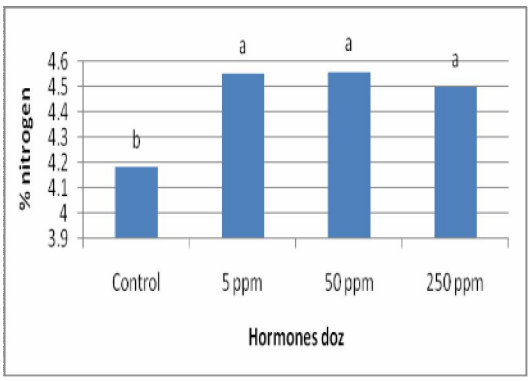

Fig4. Effect hormone doz GA3 on % nitrogen

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