

# Effect of nitrogen and potassium to the soil and spray on winning and winning some of the components and the quality of wheat

*Triticum aestivum L*

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## Abstract

Field experiment was conducted in Rashidiya in the sedimentary soil of tissue fusion alluvial mud in the winter season 2004-2005. To determine the best concentration of nitrogen and potash Irchan him to shoot to plant wheat Rejection of class - 95 in AL BATAN and flowering stages and are complementary to fertilize the ground, and their impact on winning and winning some of the components and the quality of wheat grain.

Carried out a global design sectors experience the full randomization RCBD, it included four concentrations of nitrogen is {0,4000,5000 0.6000 mg N. L<sup>-1</sup> - in urea (46% N)}, and four concentrations of potassium is {0,500,1000,1500 mg liter<sup>-1</sup> K. - potassium sulphate in fertilizer (41.50% K)}, as well as the traditional add-on treatment to the soil and three replicates. The results showed more than paper-feeding nitrogen and potassium fertilizer significantly in winning and winning some of the components and grain quality of wheat in comparison with traditional add-on to the soil.

## Introduction

Intended to nutrition paper Basmadi nitrogen and potassium to plant wheat L *Triticum aestivum*, they spray solution of these insignificantly concentrations diluted and harmless or distorted to the total wheat vegetation and are complementary to fertilize the ground and not a substitute for, especially in the stages of growth and development of spike, any period of incapacity or lack of root of the plant for meet the requirements of the upper parts of these two elements necessary to delay aging and maturity is full of grain spike (14) The reality of the case added fertilizer nitrogen and potassium by two waves, first in agriculture and the second in the stage of the forest high quantities and in balance with the soil conditions and the ions of other nutrients (1) You are additions high of fertilizer nitrogen is lost Baltair or washing into the water underground, which disrupt the balance of environmental adversely affect the health of humans and animals alike (6), as well as the conditions of competition severe among roots available than in the soil solution and extend this competition to include soil microorganisms to represent vital in their tissues (20) and contributes to slow release potassium fertilizer and install the most added it permanently in the soil clays to reduce the benefit from the

wheat plant, causing an imbalance in the balance is vital for all metabolic and physiological processes within the wheat plant (10). Therefore proposed (19) nutrition paper fertilization as a way complementary to the ground in the two phases of fertilization AL BATAN and flowering or fullness to raise the efficiency of the wheat plant to take advantage of these two elements and reduce waste Basmadema Alamadavan to the soil and maintain environmental balance and Alveslchi plant alike. To study the effect of feeding paper fertilizer nitrogen and potassium in winning and winning some of the components and the quality of wheat Rejection - 95 in the circumstances of the Central Region in Iraq make this search.

### **Materials and methods**

Was conducted in one of the fields Rashidiya, northeast of Baghdad in the sedimentary soil of tissue fusion alluvial mud, took them before planting stochastic models of the depth of 00-30 cm, then dried and good antenna and passed a sieve of 2 mm diameter Fattahth. Use the leaky soil suspension (1: 1) for chemical analysis, with an estimated degree of interaction of the PH of soil using a Conductivity Bridge in (8). And estimated the exchange capacity of the positive ions according to the method proposed by (13) and private Baltrb limestone. And estimated organic matter by wet digestion method Walkely and Black in (2). Extract all nitrogen-ready solution KCl (2N) and to the extent ammonium device Alcaldal by the way Keeney and Bremner, as set out in (2), after the extraction of ammonium estimated nitrate device Alcaldal by the way Bremner, as set out in (2) and by the way the Olsen extract all the phosphorus-ready and as much as your Spectrophotometer at the wavelength of 882 nm and as stated in (12). And mediated by the device as much potassium Flamephotometer ready-under (2), and then estimated the tissue in a Day-mediated sucking and as set out in (2).

Table (1) illustrates some of the physical and chemical characteristics of the soil before planting

Was conducted in the experience of a global design sectors complete randomization RCBD, as it included four concentrations of nitrogen and four concentrations of potassium, as well as on the treatment of add-traditional to the soil and three replicates, and include treatment of add-traditional to the soil which are necessary to determine the response to plant wheat for transactions of feeding paper is a treatment A comparison of experience as a whole, as well as 200 kg N. e.1 with 60 kg K. E.1 first two payments when agriculture and the second stage in the forest, especially when you see the branch with the third leg of President most of the wheat plants in the field as of 20/11/2005 any stage under the GS-30 (17). The paper-based

transactions nutrition Faded it 40% of the amount of fertilizer nitrogen and potassium added in the conventional treatment added. And has added two payments and Bmoadin mentioned above, that is 80 kg N. e.1 and 24 kg K. e -1. Was added to all transactions phosphate fertilizer by 60 kg P. E -1 at agriculture. The use of urea (N% 46) a source of nitrogen fertilizer and triple superphosphate fertilizer (20.24% P) a source of phosphorus and potassium sulfate fertilizer (41.50% K) a source of potassium.

Been used spray capacity of 10 liters of spray and to avoid overlap with the elements and ions that may be present in irrigation water or the tap I use distilled water as a solvent for the fertilizer nitrogen, potassium, added 0.02% of the cleaning liquid to reduce the surface tension of water and to ensure wetness full of papers to increase the efficiency of the solution spray to penetrate the Olkyotkl layer in the shoot of the wheat plant. (14) and used in the process of spraying urea (N% 46) a source of fertilizer nitrogen and potassium sulfate (41.50%) source of potassium.

Table (2) shows the concentrations of nitrogen and potassium (b mg. Liter -1) and the corresponding quantities per hectare, as sprayed by 1500 liters of water. E.1

Bmoadin been spraying and cumulatively for all concentrations, the first stage in AL BATAN on 03/03/2005 and represents 45 - GS according to (17) and the second at the end of flowering stage as of 04/10/2005 and represents 69 - GS according to (17). Plowed soil of the field and enjoyed amended and divided into (51) and unit test to expel 15:00 × 3 M. The left distance of 2 m between sectors for the purpose of separation between the pilot-plant, planted in each unit test Line 12 away from each other 0.2 m seeds of wheat Rejection -95 of 140 kg. Tons. E -1 in the 11/25/2004 and was being as needed for irrigation crop and the number of irrigations in the latest six irrigations 04/20/2005, Kovan and aphids on 07/03/2005 Alnokoz pesticide spraying by 1 ml. L 1 - on the plants.

And at maturity the full and yellowing of the spike, the plant as of 05/15/2005 harvested plants manually from the area of 1 m<sup>2</sup> from the center of each unit test and the weight of winning grain after calculating the number of grains per spike and weight of grains in spike per average of 25 spike taken randomly according to (14), then I took a random sample of grain of wheat and washed with water tap and then distilled water to remove the minutes pending from the dust and then dried at a temperature of 65 °C for 48 hours until proven dry weight, then ground, took 0.2 g of the digested using an acid and sulfuric Alberroclorrett then transfer the result of digestion to a bottle of volumetric capacity of 100 cm<sup>3</sup> and finished size to the mark with

distilled water according to (7) and to the extent of nitrogen in grain using a Almaekercaldal by the way Bremner, as set out in (12), and as much protein and according to (16) by multiplying the percentage of nitrogen concentration in the grain group (( 5.7.

Use the test is less significant difference (LSD) and the level of probability of 0.05 Bjzeen, as it included statistical analysis of the first test of differences in moral response characteristics of the study for each of the concentrations of nitrogen and concentrations of potassium, while the analysis included the second test differences moral between transactions overlap concentrations of nitrogen with concentrations of potassium in comparison with addition traditional compost to the soil according to (15).

### Results and discussion

Seen from Table (3) that the concentrations of N1 and N2 and N3 have achieved significant increases focus N0, it earned 1.47 and 2.41 and 2.90 tons. E-1 in winning grain and 23.27 and 33.07 and 36.56% in the number of grain per spike and 0.30 and 0.72 and 1.03 g in weight in grains per spike and 2.14 and 4.12 and 5.31% in the percentage of grain protein. This is consistent with the results (4) and (18) and (20).

Itatrhasal grain and the date of its components and how to add nitrogen fertilizer for crops, number of grains per spike is determined by three weeks before and after the expulsion of carry-over ears, Vttaghiz plant nitrogen is necessary in this period to the success of holding the largest number of grains per spike (4).

Table (3) shows the effect of nitrogen concentrations in winning and winning some of the components and the quality of wheat

Note that the processing of nitrogen in this period raises the efficiency of the securities, especially the flag leaf in the production of carbohydrates and amino acids, proteins, soluble and transmitted to the sites of filling in Andospirom pill, which is reflected positively in the weight of grain in the ear one and thus increase the amount of winning product per unit area (20), as well as for increasing the proportion of kidneys in the bean up amino acids in Andospirom bean, which indicates its suitability for good food industries different and this is consistent with (10) and (19), it found that the appropriate processing fertilizer nitrogen in mid-stage AL BATAN and mid-stage Ajeeni a positive impact on winning and quality of wheat .

(Table 4) shows the effect of potassium concentrations in winning and winning some of the components and the quality of wheat.

Seen from Table (4) that the concentrations of K 2 and K 3 have made significant increases to focus K0, reaching 0.41 and 0.71 (tonnes. H-1) in grain and holds a 1.76 and 2.22% in the number of

grain per spike and 0.27 and 0.36 g in weight of grains per spike, and in 0.56 and 0.84% in the percentage of grain protein. This is consistent with the results of (3) and (11).

Affect potassium fertilizer to increase the sum of wheat influence the direct components, potassium moves Asiaticanin to prefix spike, increasing the number of cells specialized to configure the prefix beloved, which means increasing the number of grains in the ear one (1), as well as activate the enzymes transfer carbohydrate and amino acids in shoots to filling the sites Andospirom bean, which affects positively to the increase in weight of grains per spike (3). And provided in the flowering stage and fullness, a period that the synthesis of proteins dissolved and prepared for storage in grain contribute to improving the quality and otherwise accumulate and turn into amines toxic build up in tissue paper, leading to her death, and thus atrophy grain spike (14) This is consistent with (18) and (19), as they found it necessary to provide potassium in the developmental stages of spike phases, especially AL BATAN and fullness to improve the properties of grain filling and increase the sum in the unity of space.

Seen from Table (5) than feeding the paper added to the treatment as traditional spray concentrations achieved N3K2 N3K3 and significant increases in the product of grain amounted to 0.96 and 1.37 (t. E -1), respectively, and this is consistent with the findings of the (3) and (19). Represents the product of grain the final outcome of all events vital place in the stages of growth, Good governance is tracking a great way to fertilize allow the processing of a balanced plant nutrient according to need stages of growth, especially nitrogen and potassium, as we can plant wheat in the developmental stages of spike and the concomitant aging of the fabric of shoots from Action Net Photosynthesis high peaks between the emergence and flag leaf stage and the expulsion of what they produce spikes root of filler in the grain spike at the end of the growing season (1).

Point is a reflection of the sum of its components increase in the number of grains in spike, weight of grain to affect directly the increase in unit area has achieved a spray concentrations N3K2 and N3K3 increases significantly in the number of grains in Alnsplp one and superior to the treatment of Added traditional b 2.50 and 2.94% respectively, as regulated nitrogen action of hormones and then control the impact of Alaoudi in the events of sovereignty apical in the ear, and the Alsetukeinin borne potassium to spike to prevent the export Alaoudi of grain to the ancient grain modern configuration which contributes to increase the proportion of a grain on the axis of Spica They affect a positive increase in the number of grains in spike one (5)

and (9) The use of nitrogen uptake of roots in the organization of the work of hormones towards increased leaf area and elongation of internodes upper and limited impact in increasing the number of grains spike per compared to plants grown in the Transactions of feeding paper and this is consistent with (3) and (10 ).

Table (5) shows the effect of feeding paper transactions with nitrogen and potassium in the winning and winning some of the components and the quality of wheat.

And achieved spray concentrations N3K1 and N3K2 and N3K3 increases significantly the weight of grain in the ear one and superior to the treatment of added traditional to the soil amounted to 0.45 and 0.54 and 0.61 g respectively, and this is consistent with (14) and (19), working in nitrogen and potassium to increase the size of the texture of food grain (Alandospirom) with an increase in the efficiency of this fabric in attracting outputs assimilation photosynthesis, it contributes to nitrogen uptake and prestigious in raising the efficiency of Ambassa to produce starch, which turns in the filling into sugars stimulates potassium enzymes transfer to fill in Andospirom bean (1 ), as well as contribute to aging of the stem and leaves of the soluble sugars, proteins and amino acids represented in the grain at maturity Alveslchi full plant wheat, which is reflected in a positive increase in weight of grains per spike (14).

And achieved spray concentrations N3K0 and N3K1 and N3K2 and N3K3 increases significantly in the percentage of protein in grains of wheat (quality) compared to the addition of conventional soil amounted to 1.14 and 1.37 and 1.65 and 2.00% respectively, and this is consistent with (1) and (3) , and (14) and that the role of nitrogen absorbed through the leaves in the maintenance of balance of metabolism of nitrogen in the textile plant of wheat, they contribute nitrogen to build protein and to provide the chloroplasts and the rest of biofilms by contributing to the delay in her old age and the reduction of demolition (11) and stimulates potassium enzymes transfer of nitrogen compounds organic, but an increasing formation of nitrogen organic textile plant by building processes and the formation of grains spike and the beginning of a grain protein in Andrspirom bean resulting in increasing the capacity of securities, especially the flag leaf on the production of soluble protein that accumulates later in the bean are protein stock (19 ).

**It may be concluded from the study**

1 - after the spraying of fertilizer nitrogen and potassium in the two phases of the supplementary AL BATAN and flowering significantly in winning and winning components and the quality of wheat compared Altkulaididp addition to the soil only.

2 - This method provided 60% of the wheat requirements of nitrogen and potassium fertilizer if the traditional way, added to the soil only, and this would reduce the risk of water pollution by nitrates and ammonia air and waste large amounts of potassium fertilizer.

3 - test this method in grassy crops is to determine the best combination of fertilizer yield the highest product of grain and with the best quality and lowest possible economic costs.

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