

Response of broccoli, *Brassica oleracea* var. botrytis to the effect of hybrids and organic fertilizer K-FULV

GROWER in some chemical an qualitative characteristics

Aseel Muayyad Mahbas Al-Saeedi Ihsan Jali Azbib

¹Ihsan . J . Ethbeab , ²Aseel . M. Al-Saeedi

Dhi Qar University - College of Agriculture and Marshlands - Department of Horticulture and Landscape Engineering

¹Email: Ehsan@utq.edu.iq

²Email: aseelalaseel1991@gmail.com

المستخلص

Abstract

The experiment was carried out in the greenhouses of the research journal of the College of Agriculture and the Marshes - Dhi Qar University in the Mohiyah area in the city of Nasiriyah during the growth season 2022-2021. The experiment began on 1111 2021 and is dated 110 2 2022. Replicators and two years old. The first factor is the cauliflower cross here, CEZAR and ANAHAR, and the next factor is the Egyptian KFULV GROWT auger taco (11000 1500 1850) km. An experimental unit, and at the end of the experiment, the results of vegetative growth were recorded, and after analyzing the results statistically, the results showed the superiority of the hybrid CEZAR over the hybrid ANAHAR in the Egyptian clash, chlorophyll, phosphorous, potassium, magnesium, and boron. Vitamin C (the rates reached 79.17, 255% and 0.28 00 2.06 49000 001, 1663.79 and 16.74 share 100 upper Uran km from the opening difference concentration 150 are the Arab unit of organic position in the same studied traits, as the results of the statistical analysis showed the presence

I. INTRODUCTION

After the individual plant (Cell Bower), the scientific name is *Brassica Oleracea* Var *Botrytis*, one of the important vegetable crops of the cruciferous family Brassicaceae. It is a winter-loving annual plant with Chellah More and Avulog Frulli. It was found in wild in the Mediterranean and Asia Minor regions. It was known by the Romans since antiquity and cultivated by the Italians. By hybridization (2000-Decotemi) annual statistics indicate that cauliflower girls with dirt from a shepherd in Iraq 39,550 dunums and pornography sought 18,190 tons (Central Statistical Organization, 2019).

Calorie K contains many vitamins such as vitamin A and C, carotenoids, folic acid, riboflavin and niacin and also contains some high elements calcium, m.



It can be presented richly to patients, and the pink suppository of cauliflower contains vitamin C in the range (100-50 mg) much more than what is found in Rall juice

L-Glucoma, which was mounted to reduce the growth of cancer cells, as it was noted that the circulation of more than one meal during the week reduces the risk of cancer by

The nominal night, which was realized in several ways, including behind the new genetic book of good quality, suitable for the conditions of the farming areas, where there are many studies that have raised, N and Al-Areen 2010), and heralds the pain of the existence of international varieties of this crop, but the research bodies and scientific companies have been working on it. Development of modern crosses that are characterized by financial specifications, or combination, ancestral transmission, and genetic factors (Hassan, 2001). Among these hybrids are the Hellenic Cezar and Anther, using in this study the rami production provided by Me Mallya Chat that the patty cannot continue and complete its life cycle without the presence of these meanings. The elements of care are necessary for the Hebrew attics. Show me the signs of God, because the

To increase the survival of this crop globally, as the specifications of those varieties are subject to genetic factors (Hassan, 2004). Among these hybrids, Cezir and Anahur, used in this study. After fertilization is one of the factors affecting agricultural production because of the infectiousness it provides to the plant, as the plant cannot continue and complete its life cycle without the presence of these nutrients. Nutrients are necessary for the vital processes within the six (Mohammed 2002). I recently decided to use manufactured and naturally extracted organic fertilizers and add them to different types of plants, due to their positive effect on the plant and improving production in quantity and quality

The organic Meccan hall, directly or indirectly, through the use of cement or the addition of plant residues to it, wants the ability of the soil to retain water on the one hand, improve the composition and ventilation of the soil and increase the year on the other hand, as well as reach a negative effluent, which increases the ability of the soil to absorb the riches and thus It increases the fertility of the soil as you want it to withstand drought and that the organic masters have an important role in the readiness of His

2013 Guledna). And this is due to the low availability of elements in the soils planted with vegetable plants in general. The organic matter works on the formation of chelating complexes to reduce the negative impact of some safety ions such as aluminum, cadmium and lead in acidic soils through the connection of different complexes (Spotto 2008). Residual pollutants or toxic materials due to the non-use of mineral and chemical fertilizers, so the organic fertilizer K - FLULV GROWER was used in this study, which is required to know when the most organic position in the vegetative, chemical and awareness characteristics and the obtained hybrids used

E. Increasing the use of organic toothpastes and reducing chemical fertilizers. 3- Materials and Methods of Action

Freedom in one of the greenhouses of the desalination plant of the College of Agriculture and the Marshes - University of Dhi Qar in the Mustafawi area - Nasiriyah during the growth season 2021 2022 Girls Experience date 111 2021 and Shamriya two works The first factor is two seasons of cauliflower, the Dutch CEZAR. The South Korean ANAHAR, and the second organic fertilizer K-HULV GROWER factor with four doses (0: 110 - 180, 155) was removed by the (LIVING LAND) company of the European Union and according to the manufacturer's recommendation, where the fertilization process was carried out weekly and the resulting company's recommendation - Before planting, the cart's eyeballs, the ornaments, depth (300) cm, the samples were passed and the air was achieved for 72 hours.



Mall (1) explains the secret of secrecy

| الوحدة | القيمة | الصفة | |
|----------------------------------|---------------|---|-----------------------------|
| . | 7.20 | درجة التفاعل PH | |
| dSm⁻¹ | 3.48 | الايصالية الكهربائية E _{Ce} | |
| Cmol.kg⁻¹ soil | 22.13 | السعة التبادلية للايونات الموجبة CEC | |
| ml kg⁻¹ | 1.19 | T.D.S | |
| g cm³ | 2.80 | الكثافة الحقيقية | |
| g cm³ | 1.37 | الكثافة الظاهرية | |
| % | 51 | المسامية | |
| g kg⁻¹ | 6.34 | المادة العضوية O.M | |
| g kg⁻¹ | 238.31 | معادن الكاربونات | |
| mg kg⁻¹ soil | 12.5 | النتروجين | الايونات الجاهزة |
| | 7.12 | الفسفور | |
| Meq L⁻¹ | 17 | الكالسيوم | الايونات الموجبة الذائبة |
| | 1.2 | البوتاسيوم | |
| | 11.2 | المغنيسيوم | |
| | 3.3 | الصوديوم | |
| | Nil | الكاربونات | الايونات السالبة الذائبة |
| | 11.2 | البيكاربونات | |
| | 12 | الكبريتات | |
| | 7 | الكلوريدات | |
| % | 10 | الطين | مفصولات التربة |
| | 6 | الغرين | |
| | 84 | الرمل | |
| مزيجية رملية | | النسجة | |

Experimental design:

Lunar High Factorial Experiments According to the Randomized complete Block Devan (RC BD) design, the experiment included Olayan, the first factor was CLEAR Manic production and met Analar South Korean production and the second factor was levels of organic fertilizer (K-PULV GROWER) produced by the company (43 Spread the leaf content of total chlorophyll (Spad) on the effect of the percentage of chlorophyll in the leaves by Handel Greenseker device produced by



the American company Trimble by reading one of the ten bouquets selected from each experimental unit and then extracting the average, and it was evaluated by units

The weapon was brought from each experimental unit. The sin was to choose full-width leaves that were at the peak of their physiological activity. They were flushed

Share the age of the boron according to the Garmins method) mentioned in Black (1965). If one uncle from the Lebanese family was placed in a handicraft party, to which was added (5) ml of the heated solution of Mabrouk (105) for (24) hours, the samples were incinerated in Muffle furnace device at 500 C for three hours and the samples were cooled in (10) ml of sulfuric acid (0.36 N), then filtered. Consume 100 ml of concentrated globule acid. The contents were left for 5 minutes and left

Chemical properties and awareness

11 Leaves content of chlorophyll (spad): Al-Manfeh in Table (2) indicates that there is a significant difference between the hybrids and the superiority of CEZAR Hamin over ALSHAK in the rate of chlorophyll in the leaves, which amounted to (19.17, 12 78) Syed on the pollination, when there were no levels in the rate of chlorine And it was said that in the leaves of the cauliflower plant, it reached (75.67, 77.50, 8150, 50 80) (Sput) for the levels (110.0 185,150), respectively. The rest of the other fat levels of the organic fertiliser, and the same year showed the interaction between the hybrids and the levels of the fertilized masters, as the highest rate of Al-Kore and El Sal ur was that the limit of its series Al-Salwan (150) are from the organic accountant and the CEZAR hybrids , it reached (8233) (Sput) and with a significant difference For all overlaps either the lowest value was said to breed from the hybrid ANIAR and the treatment of the dam

((75.33) Table 2 indicates hybrids, FELV GROWER levels and overlap in chlorophyll content of leaves. Spad: Dominant

| تراكيز المخصب العضوي غم . وحدة تجريبية - ١ | | | | | الهجن |
|--|----------------|-------|-------|---------|-------------|
| المعدل | 185 | 150 | 110 | 0 | |
| 79.17 | 80.67 | 82.33 | 77.67 | 76.0 | CEZAR |
| 78.42 | 80.33 | 80.67 | 77.33 | 75.33 | ANAHAR |
| | 80.5 | 81.50 | 77.50 | 75.67 | المعدل |
| الهجن | المادة العضوية | | | التداخل | L.S.D(0.05) |
| 0.830 | | | 1.174 | 1.660 | |

The upper ratio of nitrogen in the leaves

A daughter produces Table (3). There is an upper difference in the percentages of nitrogen between the cauliflower hybrids, where the average percentages of the hybrids CEZAR and ALNHAR 2 were (255,255) % over seven, the organic scientists achieved a higher increase in the concentrations of nitrogen in the leaves where the percentage rates The percentage of nitrogen with the levels of organic fertilizer added (2.181, 2.318, 2.625, 2.193) 96, respectively. The comparison treatment without addition was known to all of the jackets, and the treatment at the level (150) outperformed all the treatments for the ratios of nitrogen levels. As for the interaction between the two hybrids and the levels of organic fertilization, and their change in percentage of the change was done - the values obtained at the treatment (150) were CEZAR and amounted to (2.813) 6%, and it significantly outperformed with a high probability level of 0.05 at all levels, while the lowest rate of nitrogen percentage reached when the overlapping treatment between the comparative LAR hybrids (0) i.e. with the addition of organic fertilized (2.083)00

Table 3 Hybrid brightener and levels of FULV GROWER and the interaction between them in the nitrogen content of leaves .

Organic enriched concentrations of gm. Trial one

| تراكيز المخصب العضوي غم . وحدة تجريبية ⁻¹ | | | | | الهجن |
|--|----------------|-------|-------|---------|-------------|
| المعدل | 185 | 150 | 110 | 0 | |
| 2.554 | 2.67 | 2.813 | 2.453 | 2.280 | CEZAR |
| 2.255 | 2.316 | 2.436 | 2.183 | 2.083 | ANAHAR |
| | 2.493 | 2.625 | 2.318 | 2.181 | المعدل |
| الهجن | المادة العضوية | | | التداخل | L.S.D(0.05) |
| 0.013 | | | 0.018 | 0.026 | |

Oral content of EUR (pan) of the product in Table (7) that the originality of the organic fertilizer achieved superior differences between the CEZAR and ALNEAR hybrids in the rate of boron in the leaves, which amounted to (58.65.63.72 ppm on the timing with a probability of (0.01) The levels of the modified organic fertilizer concentration Boron in leaves for broccoli ligaments amounted to (31 58.5759 62.91063.940) ppm for levels (185,150.110,0) for experimental unit 1 on the benefit and symposiums making of storks. Significantly over the rest of the other sadistic levels of organic fertiliser The same table showed the dissolution of Muscle care and normal levels of boron concentration in leaves at the interaction between the level (150) H. Experimental unit, of organic fertiliser and CEZAR hybrids amounted to (65.40 ppm and significant difference from all interactions). What is

Table - Indicating hybrids and levels of organic fertiliser FULV GROWER and the interaction between them in the ppm boron content of leaves

| المعدل | تراكيز المخصب العضوي غم . وحدة تجريبية ⁻¹ | | | | الهجن |
|--------|--|-------|-------|---------|-------------|
| | 185 | 150 | 110 | 0 | |
| 63.72 | 63.91 | 65.40 | 63.21 | 62.35 | CEZAR |
| 58.65 | 61.91 | 62.48 | 55.42 | 54.79 | ALNHAR |
| | 62.91 | 63.94 | 59.31 | 58.57 | المعدل |
| الهجن | المخصب العضوي | | | التداخل | L.S.D(0.05) |
| 0.127 | | | 0.180 | 0.255 | |

villin C in syphilis

, as the solutions show an upper difference between the hybrids with the superiority of CEZAR over the hybrid ALNEAR at a rate of (158,16.714,13) mg 100 hm In the mean time, the publication of the levels of organic position in the concentration of vitamin) in the flower loan amounted to (14,307, 627, 16: 430, 16,040, 14) 9 for concentrations (0, 110, 150, 185), which are experimental units for the highest commodities and time. The seminal on the comparison reason (0) without the hardship, H and treatment (150) are the experimental unit significantly superior to all treatments the appropriate organic levels, and the same table showed that the treatment was correct and the levels of each mother value of the concentration of vitamin C in floral lending at the two treatments with a level of (150, 185) are an experimental unit of the organic and hybrid calculator CLEAR, which reached (17747 17117) mg 100 - on the enrichment of the feed significant over the rest of the hours. The lowest value obtained when the interaction between ALNHAR hybrids and the comparator treatment (0) with the role of Asala amounted to (12850) mg 100 of the fresh weight of Sol 8. It shows the hybrids and the levels of the organic position FULV GROWER and the interaction between them in the content of the flower opportunities of vitamin) (mg 100 gm). trap weight):

| المعدل | تراكيز المخصب العضوي غم . وحدة تجريبية ⁻¹ | | | | الهجن |
|--------|--|--------|--------|--------|-------|
| | 185 | 150 | 110 | 0 | |
| 16.744 | 17.337 | 17.757 | 16.120 | 15.763 | CEZAR |

| | | | | | |
|--------|---------------|--------|---------|--------|---------------------------------|
| 13.458 | 13.523 | 14.323 | 13.133 | 12.850 | ALNHAR المعدل L.S.D(0.05) |
| | 15.430 | 16.040 | 14.627 | 14.307 | |
| الهجن | المخصب العضوي | | التداخل | | |
| 0.177 | | | 0.165 | 0.234 | |

The pampered raises the slight and the organic pitch on the chemical and sensitizing qualities :

Loya Dead Al-Shallah tried to inform the CEZAK hummingbird significantly superior to the ALNIAR hybrid in the chemical and sensitization characteristics that were touched upon in this study (carbohydrates, etbelin and titron). Hybrids and genetic factors are what determine the degree of growth and development of the kidney. It tells us that the cultivated seeded has a broad impact on the quantity and quality of the crop (Zero 2012) and these results are consistent with what was found by (Ajwad 2019), where it was found that there are significant differences between the cultivars and hybrids of Fraglets in the legitimate traits. The superiority of CEZAR is that the organic solution of Folic acid, which increases the capone exchange capacity CEC. And it has the ability to form natural parameter compounds and protects the retort and liquefies the mobile class of nutrients, especially the Egyptian potassium and iron (which is included in the organic fertilizing blend used except for the mothsium), an important role in the activation of

Dost Khalil 2004) and this result agrees with (Mohammed 2017). The organic name fulvic increases the gravity of the boiled elements (major and small) and thus makes them more amenable to touches as the element of married couples that participate in the composition of the four universal Ponnynns. And the age of the tiger that builds chlorophyll through the various periods inside the plant by acting as an enzymatic equivalent of the enzyme nitrite reductante and hydroxylamin reductane and by killing the rebels of the quantities that contain a lot of chlorine in a shower, and the age of iron that accompanies the enzymes for the representation of chlorine and said this and that 80% of the iron is found in the waist plastids Which has a great role in the process of acoustic construction and building of chlorine and pre-medicin, which touched Phytoterritin, as well as the age of copper, which obtains in the formation of piratocyanin proteins, which are the jars of Asia in the installation and construction of exclusive plastids. (Aloe Vera My Workshop)

The structure of carbohydrates in floral loans treated with organic dolphic position may be attributed to the role of amino acids and organic nitrogen, which the organic meaning contains in the king's salad absolute and leaf lentils, and then increase regulations for the representation of the molecule and the accumulation of carbohydrates and the reason for leading the ratio of proteins to humic acids (polynic acids rights in their composition On the account of the shoots and sprouts and spraying them with amino oriole in a meter and the high percentage of second total solids TSS for the flowering mares in the organic fertilizing treatment may be attributed to the role of amino acids in the active spermatogenic processes of the sally basket in improving vegetative growth and increasing the regulations of the carbonic metabolism process and its transmission to flowering mares And then increasing its concentration, and the effect of the organic fulvic acid, which led



to the chaat obtaining the blessing of shortening food, including nitrogen, phosphorous, potassium and some of the minerals that: on the activation of the vital activities of the plant and then the formation of organic acids, including the protector of the ascor as Philosophy) and Taqla agreed with - Syphilis (2016) found a significant difference and superiority in the percentage of milliliter per liter of total mites The denial of

In the composition of this organic stomach, such as Cystine and Cymens secret Muthione and its fire in general in the rosette of the vegetative growth indicators of the plant, and thus the carbon metabolism process will increase in hibernation, which will be reduced to the fennel, which leads to an increase in the carbohydrates included in the formation of the vitamin halal (2011).

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