EFFECT OF LOW-VOLTAGE -ELECTROSTATIC-FIELD (LVEF) ASSISTING REFRIGERATION ON PRESERVATION QUALITY OF STRAWBERRY
/
低压静电场辅助冷藏对草莓贮藏品质的影响

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ABSTRACT
In order to maintain the storage quality of strawberry after harvest and study the effect of low voltage electrostatic field (LVEF)-assisting refrigerated storage on strawberries quality, the study applied the low voltage electrostatic field (3kV 4±1℃ in LVEF group) to store strawberries in refrigeration environment, and setting refrigerated storage at 4±1°C as the control (CK group). The results showed that the freshness days of strawberries refrigerated by low voltage electrostatic field were twice as long as those of refrigerated group. The brightness and red-green degree of strawberries in LVEF group were 1.5 times and 2 times of those in CK group, respectively. The peak hardness of strawberry in LVEF group was 1.43 times of that in CK group, and the hardness decline range was 18.97% lower than that in CK group. The decreasing ranges of Total soluble solids (TSS), Titratable acids (TA) and Vitamin C(VC) in LVEF group were 43.91%, 60.01% and 46.17% lower than those in CK group, respectively. The increment of Malondialdehyde (MDA) of strawberries in LVEF group was 19.77% lower than that in CK group, and the activity peak of Superoxide dismutase (SOD) of strawberries in LVEF group was 1.22 times of that in CK group, and the decreasing range was 22.86% lower than that in CK group. After 10 days of storage, the weight loss rate and decay rate of strawberries in LVEF group and CK group were 16.69%, 15% and 70.65%, 59.45%, respectively. In conclusion, applying low voltage electrostatic field to refrigerated storage can effectively inhibit the quality deterioration of strawberries during refrigerated storage period.

摘要
为保持草莓采后贮藏品质。本研究采用冷藏环境中施加低压静电场（LVEF 组、3kV、4±1℃）方式贮藏草莓，以 4±1℃冷藏为对照（CK 组），探究低压静电场对草莓贮藏品质的影响。结果表明，低压静电场冷藏草莓保持新鲜的天数是冷藏组的2 倍；LVEF 组草莓的亮度和红绿色度分别是CK 组的1.5 倍和2 倍；LVEF 组草莓硬度峰值是 CK 组的 1.43 倍，硬度下降率较 CK 组低 18.97%；LVEF 组草莓的可溶性固形物、总酸、维生素 C 含量下降率分别较CK 组低43.91%、60.01%、46.17%；LVEF 组草莓的丙二醛(MDA)增量较CK 组低19.77%，LVEF 组草莓超氧化物歧化酶(SOD)活性峰值是CK 组的1.22 倍，其下降率较CK 组低22.86%；贮藏10 d 时，LVEF 组和CK 组草莓的失重率和腐烂率分别是：16.69%、15%和70.65%、59.45%。由此可见，施加低压静电场可有效抑制草莓在冷藏过程中的品质劣变。

INTRODUCTION
After harvesting, strawberries have rapid physiological metabolism, and spoilage occurs when they are placed at room temperature for 1-2 days (*Barikloo et al., 2018*). In order to avoid postharvest loss of strawberries, it is urgent to take effective storage and preservation measures to maintain their edible quality and extend their shelf life. At present, the commonly used storage and preservation methods of postharvest strawberries include: refrigeration, modified atmosphere refrigeration, coating refrigeration, etc. The traditional refrigeration method is simple to operate, and the physiological metabolism of strawberries is inhibited by reducing the storage temperature, and the storage effect is improved with the decrease of the refrigeration temperature, but the storage cost also increases, and it may also cause cold injury loss (*Pott et al., 2020*).

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Modified atmosphere refrigeration greatly inhibits the physiological metabolism of strawberries by adjusting the gas composition in the refrigerator room, but its equipment investment cost is high, and the modified atmosphere parameters need to be determined by experiments for different storage conditions, which has certain technical difficulties (*Wang et al., 1988*). The refrigeration method of coating film is often used to coat the surface of strawberry with multi-functional plant ingredient extract, and the effect of coating film on strawberry quality is still unclear and needs to be clarified. Electric field refrigeration acts on strawberries by applying different types of electric fields to the cold room, changing the activity of water molecules inside the strawberry, accelerating the rate of internal temperature drop, reducing heat loss, and inhibiting its metabolic activity (*Zhao et al., 2019*). Electric field refrigeration is increasingly used in the field of agricultural product preservation due to its non-contact and ion-free residue preservation.

Among different types of electric field refrigeration, low voltage electrostatic field (LVEF) assisted refrigeration is favored by the market due to its low voltage, good effect and low investment, and has been widely reported in the storage and preservation of fruits, vegetables and meat in recent years. The output voltage of low-voltage electrostatic fields is usually ≤3 kV, the current is ≤ 0.2 mA, and the power is ≤ 100 W, which has the characteristics of high safety, low equipment investment, energy saving and environmental protection (*Liu et al., 2023*). It has been reported that the low-voltage electrostatic field reduces the free energy of the repositioning of water molecules in agricultural products, reduces the migration of bound water to free water, and makes the water molecules form a more orderly cluster structure, as if building a moisture barrier for freshness in agricultural products.

In this study, an electric field generator was set up in the refrigerator to form a low-voltage electrostatic field, and the effects of electric field freezer refrigeration on the sensory quality, nutrient composition, cell membrane integrity and antioxidant activity of strawberry were explored, so as to provide a reference for the practical promotion of low-voltage electrostatic field-assisted refrigeration technology for agricultural products.

MATERIALS AND METHODS

Materials and Reagents

Within this study there have been used the following materials and reagents. Strawberries: Hongyan strawberries from Shanxi Nonggu Strawberry Industrial Park, picking fresh strawberries with uniform size, no pests and diseases and mechanical damage, eight ripe, packed into plastic hole pallet boxes after harvest, covered with PE plastic wrap, and transported back to the fresh-keeping laboratory immediately after harvest for storage tests. Reagents: Sodium hydroxide, trichloroacetic acid, thiobarbituric acid, phosphoric acid: analytical pure, Tianjin Damao Chemical Reagent Factory, ascorbic acid, potassium hydrogen phthalate, phenolphthalein: analytical pure, Tianjin Dengfeng Chemical Reagent Factory, anhydrous ethanol: analytical pure, Tianjin Fuyu Fine Chemical, red pheloline: analytical pure, Anhui Kuer Bioengineering Co., Ltd., ferric chloride: excellent pure, Tianjin Kemiou Chemical Reagent Co., Ltd., superoxide dismutase (Superoxide dismutase, SOD) assay kit: Nanjing Guangxin Biotechnology Co., Ltd.

Main instruments

Within this study there have been used the following main instruments. Electric field refrigeration unit. Electronic Balance: Type JY20002, Hunan Lichen Technology Instrument Co., Ltd. Digital Brix Meter: LC-DRT-94B, Hunan Lichen Science and Technology Instrument Co., Ltd. Potentiometric titrator: ZDJ-4A, Shanghai INESA Scientific Instrument Co., Ltd. Desktop high-speed refrigerated centrifuge: V-1200 type, Shanghai Mapped Instrument Co., Ltd. Portable Surface Colorimeter: CM-5 Type, Konica Corporation. Texture analyzer: TMS-PRO type, FTC Company. Visible spectrophotometer: 2100 type, Shanghai Da Nico Instrument Co., Ltd.

Methods

Construction of electric field refrigeration device

A low-voltage electrostatic field device is built, as shown in Fig. 1, which is mainly composed of an electric field generator, an electrostatic plate, a power cord, a wire, etc. The power cord is connected to the household circuit (220V), and after the action of the electric field generator, a 3kV voltage is formed on the electrostatic field plate, and the electrostatic field is released around the electrostatic plate. Fix the electrostatic plate on the back wall of the refrigerator, place fresh strawberries on the shelves of the refrigerator, and cover the strawberries with PE plastic wrap, as shown in Fig. 2.

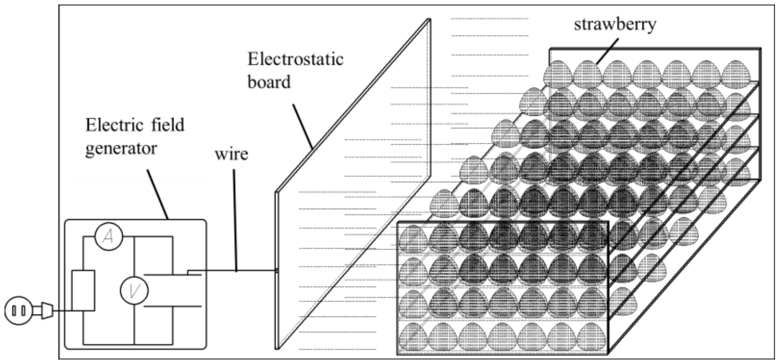


Fig. 1 - Schematic diagram of low-voltage electrostatic field device

Fig. 2 - Physical diagram of electric field refrigeration device

Sample handling

Strawberries were randomly divided into two groups: low-voltage electrostatic field refrigeration group (LVEF group) and refrigerated control group (CK group). The strawberries of the LVEF group were evenly placed on the shelf of the electric field refrigeration device and covered with PE plastic wrap, the voltage of the electrostatic plate was 3 kV, and the distance between the strawberries and the electrostatic plate was 30 cm. Arrange the strawberries of the CK group evenly on the shelves of the refrigerator and cover them with PE plastic wrap. In order to control the influence of electric field, the distance between the electric field refrigeration device and the refrigeration cabinet should not be less than 2 m. The refrigeration temperature of the strawberries in both groups was set at 4±1°C and the relative humidity was maintained at 90% ±5%. Strawberry quality indicators are measured by sampling every day.

Colorimetry

The brightness value (L*) and red-green value (a*) of strawberries in each treatment group during the storage period were measured daily by CM-5 portable surface colorimeter, and 10 strawberries were randomly selected during the measurement, and the measurement was repeated 3 times, and the average value was taken.

Hardness determination

The TMS-PRO texture analyzer was used to measure the hardness value of strawberries in each treatment group during the storage period every day, and a cylindrical measuring probe with a diameter of 3 mm was selected, and the loading speed was 100 mm/min, the unloading speed was 150 mm/min, the downward pressure distance was 5 mm, and the compression pause time was 2 s. During the measurement, 30 strawberries were randomly selected, and the measurement was repeated 3 times, and the average result was taken.

Weight loss rate determination

A total of 30 strawberries were selected in each treatment group, each of which was divided into small groups, and the weight loss rate of each group of strawberries during storage was measured daily using an analytical balance (accuracy 0.01 g), and the results were averaged. The weight loss rate M is calculated according to equation (1).

$$M = [(M_0 - M_n)/M_0] \times 100 \tag{1}$$

where: M is the weight loss rate of strawberry, [%]; M_o is the initial mass of strawberry, [g]; M_n is the mass of strawberries measured during storage, [g].

Determination of decay rate

Three groups of strawberries were fixed in each treatment group to measure the decay rate every day, and each group contained 30 strawberries, and the results were averaged. When the strawberry has shrunken, has sap exudation, lesions or microbial colonies, etc., it is considered to have rotted, and the strawberry rot rate D is calculated according to equation (2).

$$D = (n/30) \times 100\% \tag{2}$$

where: D is the rate of decay, [%]; n is the number of rotten strawberries per measurement.

Soluble solids (TSS) content determination

Use a digital Brix meter to measure the TSS content of strawberries in each treatment group during the storage period every day, randomly take 12 strawberries, remove the calyx, mash them with a pestle, filter the juice with gauze, absorb the filtrate droplets on the refractive prism of the digital Brix meter, evenly cover the mirror, press the button to measure the TSS content, record the data after the screen display value is stable, repeat the measurement 3 times, repeat the sampling 3 times, and repeat the above operations, and the measurement results are averaged.

Total acid (TA) content determination

The ZDJ-4A automatic potentiometric titrator was used to measure the TA content of strawberries in each treatment group during storage every day, Set the pH of the acid-base titration end point of the instrument to 8.2 (*Chung et al., 2015*). Read and record the volume of the NaOH standard solution consumed. The TA content of strawberries was calculated according to equation (3), and the measurements were repeated 3 times, the samples were repeated 3 times, and the average value of the measurement results was taken.

$$X = [c \times (V_1 - V_2) \times k \times F]/m \times 100\% \tag{3}$$

where: X is the total acid content of strawberry, [%]; c is the concentration of NaOH standard solution, and the value is 1, [mol/L]; V_1 is the volume of NaOH standard solution consumed during titration, [mL]; V_2 is the volume of NaOH standard solution consumed during blank titration, [mL]; k is the conversion factor of acid, with a value of 0.067; F is the dilution factor of the test solution; m is the mass of the sample, [g].

VC content determination

The VC content of strawberries in each treatment group during the storage period was measured daily by spectrophotometry (*Shangjian et al., 2023*), and 12 strawberries were randomly ground into pulp for later use, and the measurement results were averaged by repeating the measurement 3 times and sampling 3 times.

Determination of malondialdehyde (MDA) content

The MDA content of strawberries in each treatment during the storage period was measured daily by spectrophotometry (*Wang et al., 2023*). 2 g of strawberry samples were weighed, 10 mL of 100 g/L trichloroacetic acid (TCA) solution was added, the homogenate was grinded, centrifuged at 4 °C at 10000×g for 20 min, 4.0 mL of supernatant was taken, 4.0 mL of 0.67% thiobarbituric acid (TBA) solution was added, mixed and boiled in a boiling water bath for 20 min, the absorbance values of the supernatant at 450 nm, 532 nm, and 600 nm wavelengths were determined, respectively. Repeated sampling measurements were taken 9 times ,the MDA content is calculated according to equation (4).

$$C = ((6.45 \times (OD_{532} - OD_{600}) - 0.56 \times OD_{450}) \times V)/(V_s \times m) \tag{4}$$

where: C is the MDA content, [μmol/kg fw]; OD_{450}, OD_{532} and OD_{600} are the absorbance values of the reaction mixture at 450 nm, 532 nm and 600 nm, respectively; V is the total volume of the sample extract, [mL]; V_s is the volume of the extracted liquid of the sample taken at the time of measurement, [mL]; m is the mass of the sample, [g].

Superoxide dismutase (SOD) activity assay

The SOD activity of strawberries in each treatment group during storage was measured daily using the SOD kit provided by Nanjing Jiancheng. The SOD activity of strawberries in each treatment group during the storage period was measured daily, 1 g of strawberry samples were taken, ground into a homogenate under ice bath conditions, and the reaction solution was prepared according to the operation steps of the kit , The absorbance values of the assay tube and the control tube were measured at a wavelength of 550 nm, the SOD activity (U/g) of strawberry was calculated according to the formula of the kit, the sampling was repeated for 9 times, and the results were averaged.

Statistical analysis of data

The data were processed using Excel 2019 software and were expressed as mean ± standard deviations. The Origin 2022 software was used to plot the statistical charts, the SPSS 26 software was used to analyze the significance and Duncan multiple means comparison (the difference was significant when P<0.05).

RESULTS AND ANALYSIS

Effect of low-voltage electrostatic field refrigeration on the appearance, color and hardness of strawberry

The appearance of the strawberries in the LVEF group and the CK group changed in Fig. 3, the appearance of the strawberries in the LVEF group remained rosy on the 10th day and still had commercial value, while the color of the strawberries in the CK group began to turn brown on the 4th day and lost their commercial value on the 5th day. The comparative analysis showed that the low-voltage electrostatic field could better maintain the appearance of strawberry, and the combination of low-voltage electrostatic field treatment and refrigeration had a synergistic effect on the sensory quality of strawberry. Compared with refrigerated storage, low-voltage electrostatic field refrigeration can extend the shelf life of strawberries by more than 1 time.

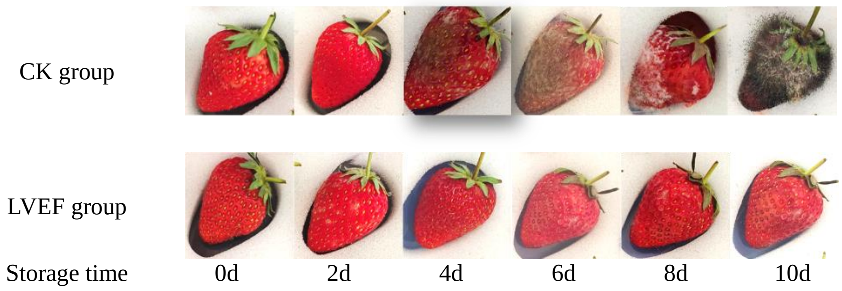
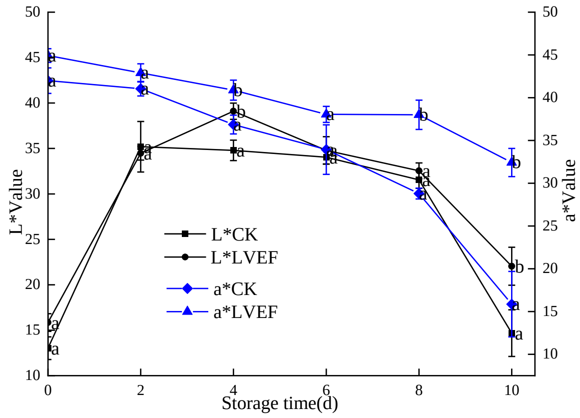


Fig. 3 - Changes in the appearance of strawberry during storage

The color of strawberries changes from white-green to dark red during ripening, and brown when overripe. As shown in Fig. 4, the L* value and red-green a* value of strawberry in the LVEF group were significantly higher than those in the CK group during storage, and the L* and a* values of strawberries in both groups showed a decreasing trend, and the L* value increased first and then decreased. On the 10th day, the L* and a* values of strawberry in the LVEF group were 22.04 and 32.42, respectively, which were 1.5 and 2 times higher than those of the CK group. The change of strawberry color is consistent with the change of its appearance. The change in color of strawberries is affected by moisture, anthocyanins, and respiration rate (*Kang et al., 2021*). The stability of anthocyanins is affected by the total acid content (*Ali et al., 2020*). It can be seen that the low-voltage electrostatic field can maintain the fresh color of strawberries for a long time by adjusting the total acid content of strawberries.



Different letters mean significant differences between groups ($P< 0.05$)

Fig. 4 - Effect of low voltage electrostatic field treatment on color change of strawberry

The hardness of strawberries in the LVEF group and the CK group during storage was shown in Fig. 5, and the hardness of strawberries in the LVEF group was significantly higher than that in the CK group during storage, and the hardness of strawberries in the two groups increased first and then decreased, and the hardness of strawberries in the LVEF group and the CK group reached the peak value of 0.86 N and 0.6 N, respectively, after 6 days of storage. It has been reported that the sudden change in ambient temperature and the rapid evaporation of water inside the strawberry lead to an increase in the hardness of strawberries (*Lin et al., 2020*). After the 6th day of storage, the hardness of strawberries in both groups began to decrease, and the results showed that the degradation of fruit cell wall, membrane material, and intercellular contact extrusion would lead to the decrease of strawberry hardness (Khalifa et al., 2016). On the 10th day of storage, the hardness of strawberries in the LVEF group and CK group was 0.63 N and 0.4 N, respectively, and the hardness of strawberries in the LVEF group and CK group decreased by 26.74% and 33%, respectively, compared with the highest values. It was clear that the low-voltage electrostatic field is conducive to maintaining the commercial hardness of strawberries and delaying the decline rate of strawberry hardness.

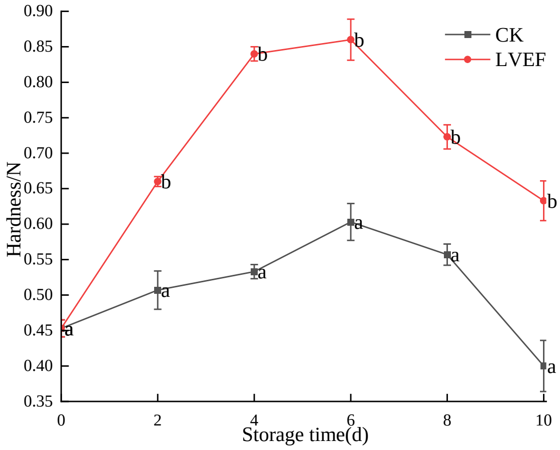


Fig. 5 - Effect of low voltage electrostatic field treatment on hardness of strawberry

Effect of low-voltage electrostatic field on weight loss rate and decay rate of strawberry

The changes of strawberry weight loss rate and decay rate during storage are shown in Fig. 6, and the weight loss rate and decay rate of strawberry in the CK group during storage were significantly higher than those in the LVEF group. On the first 8 days of storage, the increase rate of strawberry weight loss rate in the LVEF group was much lower than that in the CK group, and the weight loss rate of strawberry in the LVEF group and CK group were 3.17% and 57.32%, respectively. After 10 days of storage, the weight loss rate of strawberries in the LVEF group was 16.69%. Studies have shown that electric field treatment can inhibit the depletion of water and nutrients in fresh products (*Hu et al., 2021*). It was clear that the low-voltage electrostatic field is conducive to maintaining the moisture state and weight of strawberries. On the 7th day of storage, the decay rate of strawberries in the CK group reached 37.22%, which had lost its storage potential, and the decay rate of strawberries in the LVEF group was 11.39%. After 10 days of storage, the decay rate of strawberries in the LVEF group was 15%. Xu et al speculated that the electric field inhibited the growth of strawberry pathogens by ionizing the air to produce ozone and negative ion oxygen (*Xu et al., 2022*). Therefore, the low-voltage electrostatic field can effectively delay the decay of strawberries.

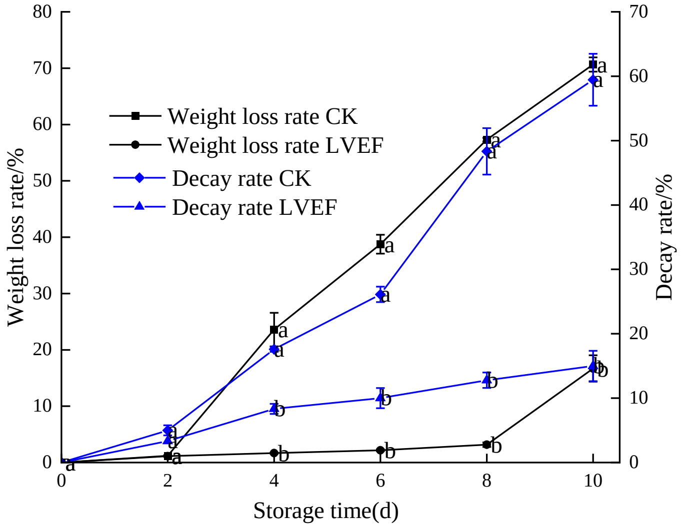


Fig. 6 - Effect of low-voltage electrostatic field treatment on weight loss and decay rate of strawberry

Effect of low-voltage electrostatic field on the contents of TSS, TA and VC in strawberry

The changes of TSS content in the LVEF group and the CK group during storage were shown in Fig. 7, and the TSS content of strawberries in the two groups increased first and then decreased. The TSS content of strawberries in the CK group reached the highest value of 11.47% on the 2nd day of storage, and then decreased rapidly at a faster rate than that of the LVEF group, while the TSS content of strawberries in the LVEF group reached the highest value of 11.10% on the 4th day of storage, and the TSS content of strawberries in the LVEF group was significantly higher than that in the CK group. After 10 days of storage, the TSS content of strawberry in LVEF group and CK group was 9.07% and 7.73%, respectively, which decreased by 18.29% and 32.61% compared with the highest value of strawberry TSS content. Relevant studies have shown that the respiration and enzymatic effects of post-ripening strawberries in the early stage of storage promote the conversion of soluble acids and other substances into sugars. The TSS in the fruits in the middle and late stages of storage is consumed by respiratory metabolism (*Ito et al., 2014*). In conclusion, the low-voltage electrostatic field can inhibit the respiration intensity of strawberry and delay the occurrence of its respiratory peak, which is conducive to the preservation of soluble solids and sweet taste in strawberry.

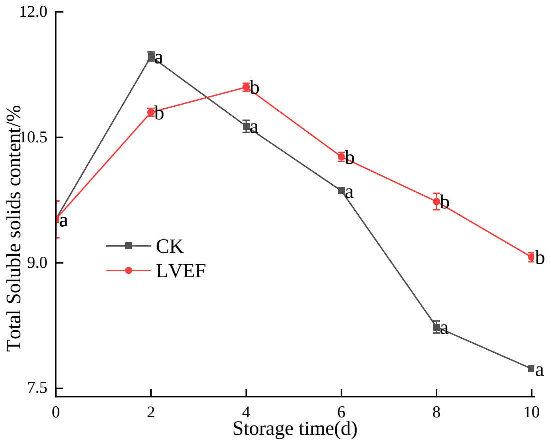


Fig. 7 - Effect of low-voltage electrostatic field treatment on TSS content of strawberry

Vitamin C is an indispensable nutrient in the human body for the prevention of iron deficiency anemia and has antioxidant effects (*Dawood et al., 2018*). The changes of TA and VC contents in the LVEF group and the CK group during storage are shown in Fig. 8 and Fig. 9, and the TA and VC contents of strawberries in the two groups showed a gradual decrease. During storage, the TA and VC contents of strawberries in the LVEF group were significantly higher than those in the CK group, and the decreasing rate of TA and VC contents was slower than that in the CK group. The initial TA and VC contents of strawberry were 0.88% and 73.53 mg/100g, respectively, and the TA contents of LVEF group and CK group were 0.78% and 0.63%, respectively, after 10 days of storage, down 11.36% and 28.41% respectively from the initial value. The VC contents of LVEF group and CK group were 61.17mg/100g and 50.57mg/100g after 10 days of storage, respectively, which decreased by 16.81% and 31.23% respectively compared with the initial values. It has been speculated that physiological metabolism such as respiration depletes fruit organic acids (*Chen et al., 2023*). The Moisture changes and enzymatic effects during storage lead to the oxidative decomposition of VC, leading to fruit senescence. In summary, the low-voltage electrostatic field can maintain the total acid and VC content of strawberry, maintain the sour taste and antioxidant capacity of the fruit by inhibiting metabolic activities such as respiration and water changes, and delay fruit senescence.

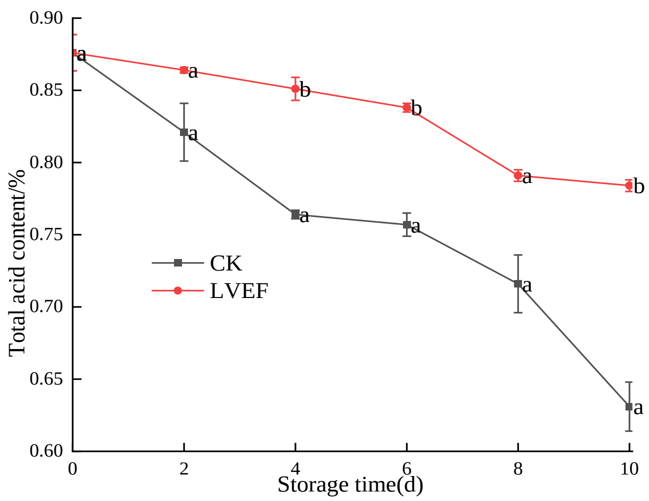


Fig. 8 - Effect of low-voltage electrostatic field treatment on TA content of strawberry

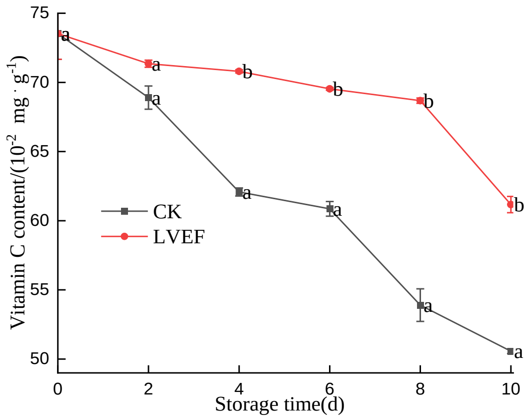


Fig. 9 - Effect of low-voltage electrostatic field treatment on vitamin C content of strawberry

Effect of low-voltage electrostatic field on MDA content and SOD activity in strawberry

Malondialdehyde (MDA) is one of the main products of lipid peroxidation in cell membranes when plants are stressed, and its content is often used to judge the degree of lipid peroxidation in cell membranes, and the higher the MDA content, the more serious the cell damage (*Lin et al., 2018*). The MDA content of strawberries in the LVEF group and the CK group during storage was shown in Fig. 10, and the MDA content of strawberries in the LVEF group and the CK group showed a gradual increase, and the MDA content of strawberries in the LVEF group was generally lower than that in the CK group during storage, and the increase rate was slower than that in the CK group. After 10 days of storage, the MDA content of strawberries in the LVEF group and CK group were 25.33 and 28.75μmol/kg, respectively, which were 24.64% higher than those in the LVEF group. Studies have shown that strawberry cells are destroyed by pathogenic microorganisms during storage to produce MDA (*Yuan et al., 2020*). In summary, the low-voltage electrostatic field had a certain inhibitory effect on the activity of strawberry pathogenic microorganisms, and reduced the degree of lipid oxidation in the strawberry cell membrane.

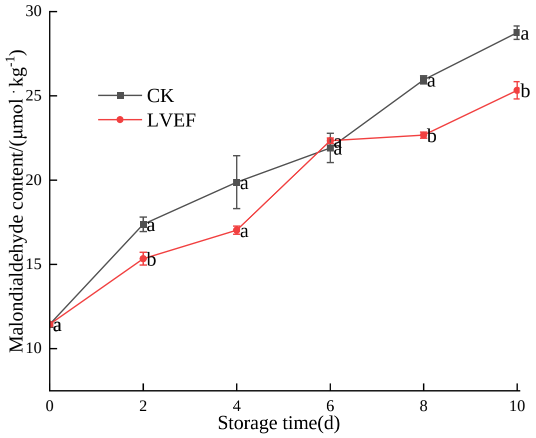


Fig. 10 - Effect of low-voltage electrostatic field treatment on MDA content of strawberry

SOD can scavenge reactive oxygen species *(Li-hui et al., 2019*) and play an important role in delaying plant senescence (*Wang et al., 2015*). The SOD activity of strawberries in the LVEF group and the CK group during storage was shown in Fig. 11, the SOD activity of strawberries in the two groups increased first and then decreased, and there was no significant difference in the SOD activity between the two groups after the first 4 days of storage, and the SOD activity in the LVEF group increased faster after the 4th day, which was significantly higher than that in the CK group, and reached the peak on the 6th day. The peak SOD activity of LVEF group and CK group was 1516.42 and 1243.45U/g, respectively, which was 21.95% higher than that of CK group, and then SOD activity began to decline, and the SOD activity of LVEF group and CK group decreased slower than that of CK group, and the SOD activity of LVEF group and CK group was 1124.88 and 827.24U/g after 10 days of storage, respectively .The results showed that the gradual increase of strawberry metabolic activity in the early stage of storage led to the increase of SOD activity, and the decrease of SOD activity caused by the senescence and biofilm destruction of strawberry in the middle and late stages of storage (*Li et al., 2018*). In conclusion, the low-voltage electrostatic field could induce the enhancement of strawberry SOD activity, reduce the oxidative damage of biofilm, and delay fruit senescence.

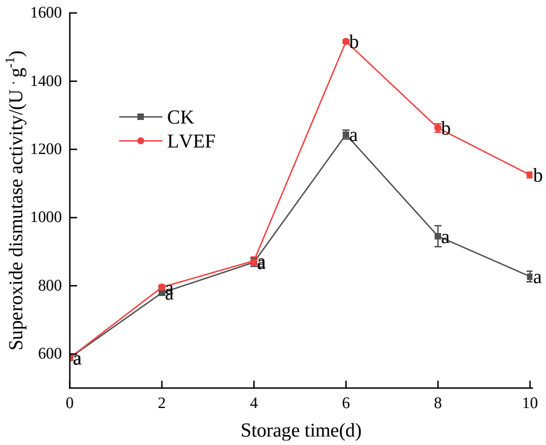


Fig. 11 - Effect of low-voltage electrostatic field treatment on SOD activity of strawberry

CONCLUSIONS

In this study, a low-voltage electrostatic field device suitable for strawberry storage was provided, which was simple in structure, reliable in principle and safe in operation. The results show that compared with traditional refrigerated storage, low-voltage electrostatic field assisting refrigeration is beneficial to maintain the appearance, color and hardness of strawberry, inhibit the respiratory and metabolic activity of strawberry, maintain the soluble solids, total acid and VC content of strawberry, maintain the sweet and sour taste of strawberry, inhibit the activity of strawberry pathogenic microorganisms, induce the enhancement of antioxidant enzyme activity of strawberry, maintain the integrity of strawberry biofilm, greatly reduce the weight loss rate and decay rate of strawberry, maintain the moist state of strawberry, delay fruit senescence, and prolong the shelf life of refrigerated strawberry by more than 1 time. Therefore, this study can lay a foundation for the popularization of low-voltage electric field-assisting refrigeration technology for strawberries.

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