

Article

Pumpkin planting and pest control

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Abstract: Pumpkin has always been an important vegetable and feed crop, which is featured by rich nutrition, good taste and easy transportation and storage. Pumpkin, as a kind of poultry feed, can achieve ideal feeding effect and improve the quality of livestock and poultry production and animal products. In order to increase the yield, scientific and reasonable planting methods should be mastered, which includes selecting and preparing soil, selecting varieties and treating seeds, sowing in time, field management and pest control, etc.

Keywords: pumpkin; planting; pest control

Pumpkin has great adaptability and wide application, and can be planted on plains, mountains and plateaus in China. Pumpkin is of high feed value, high yield, rich nutrition, etc. It can significantly increase the milk yield when used in dairy cattle feeding, increase the egg production when used in chicken feeding, shorten the feeding time for feeding and fattening ewes, and achieve good results. In short, pumpkin is rich in nutrition, high in utilization rate and good in feeding effect.

1. Selection and preparation of planting land

Pumpkin growth must first choose good soil, fertile soil and loose soil, and should choose higher soil, sunshine, irrigation and drainage according to its location. It is best to irrigate lightly filled, filled or acidic soil, and pay attention to avoid continuous planting of pumpkin with flour crops. Otherwise, it will seriously affect the yield and increase the occurrence of plant diseases and insect pests. After the land is selected, it is necessary to make preparations, clean up the land, deepen and apply enough basic fertilizer [1]. Completely degraded livestock manure can be used, usually 3000–5000 kg/km², and then compound fertilizer is appropriate. If possible, biological fungicides can also be used to achieve better results.

2. Selection and treatment of seed

There are many kinds of pumpkins. Before planting, we should choose suitable varieties according to local plant conditions, soil conditions and planting purposes. No matter which variety we choose, it should have the characteristics of high yield, strong adaptability and resistance to pests and diseases. In order to improve the germination rate, the seeds should be treated well first. First of all, the seeds engraved with impurities and deformed seeds should be removed, and then the seeds should be dried in sunny days for 2~3 days. On the one hand, it can increase the vitality of seeds, and on the other hand, ultraviolet radiation can cause sterilization effect.

Then put the sun-dried seeds in 55 °C warm water and stir them for 15min. After the water temperature drops to 30 °C, continue soaking seeds for 3~4 h. After that, rub off the mucus on the surface and wrap it in a wet cloth. People will germinate for 2~3 days in the environment of 25~30 C. After 80% of the seeds are exposed to white, they can be used for sowing.

3. Sowing at the right time

The sowing time of pumpkin should be determined according to the current temperature and local conditions. Pumpkins in our district are suitable for one-year sowing, usually during Qingming Festival, when the temperature is suitable and suitable for the sprouting plants of pumpkin [2]. If you choose early sowing, you should use mulching. When using mulching technology, you must break the soil in the process of mulching to make the mulching tight, otherwise it will affect the mulching effect and cause frostbite of plants. When sowing seeds, we must open holes and fill them with artificial forest water, put 3-4 seeds in each hole, and then cover them with soil, and the interval between each hole is usually kept at about 50 cm. This is conducive to ventilation, easy to spread and prevent pests and diseases.

4. Cultivation techniques

When pumpkin seedlings grow 2–3 true leaves, they should be thinned; the weak seedlings and sick seedlings should be cut off, and transplanted when they grow 3-5 true leaves. Usually, it should be planted in the afternoon when the weather is good, and healthy and disease-free plant materials should be selected regularly. The planting depth is generally suitable for the unearthed surface of Ye Pingqi, and then pours water to pour it through. About ten days after sowing, organic fertilizer, mainly nitrogen fertilizer, is sprayed. As the plant grows and grows to 8-10 true leaves, topping is carried out for the first time, and bulbs press stems and stems to promote the germination of overground roots. The purpose is to promote the lateral germination of branches and tendrils, and then make the larger soil block press the stems and tendrils to promote the germination of aerial roots. Set up a good support in advance and pull the branches to ensure that the branches will not block each other. When pumpkin grows to a certain stage, it enters the flowering stage, and the male flower is mainly opened at first [3]. When the female flower blooms, it is necessary to top dress phosphorus and potassium fertilizer. In order to improve the fruiting rate, artificial pollination can be carried out, and there are only 3~5 melons per plant after fruiting.

If the redundant tender melons and male flowers are removed, and the stems and vines are topped, the growth of tender melons will be promoted. Make sure to avoid the melon from contacting with the ground as much as possible, and separate it from the soil by using the bottom plate, otherwise it will easily cause the melon body to rot and the quality to decline. For larger melons, they need to be stabilized.

5. Field management

Strengthening intertillage weeding can achieve the functions of intertillage weeding, soil moisture conservation and weed removal. Therefore, the pumpkin should be replaced twice to three times during the whole growing period. During plant breeding, care should be taken not to move seedlings or damage seedlings and roots [4]. During growing period, attention should be paid to roots in soil to improve soil temperature, promote root growth and development and promote hard cuttings. Be careful not to damage plants, leaves and young melons, so as not to affect the yield. Pumpkin has strong drought resistance. If there is enough water after planting, there is no need to water it. If it can be watered properly in dry season, drainage must arrive in time in rainy season, so as not to accumulate water in the field, which will lead to futile growth of plants and rot of pumpkin.

Usually, pumpkin needs more water during fruit growth, so water it at the right time. Pumpkin has a high demand for nutrients. Besides proper basic fertilizers, it needs scientific treatment throughout the growing season. After the pumpkin bud grows, it can be poured 20 cm away from the root for fertilization. Organic fertilizer or quick-acting nitrogen fertilizer can be applied, and its dosage can be determined according to the growth situation. After fertilization, it should be watered properly. Pay attention to topdressing should follow the principle of small amount and frequent use to avoid root burns.

If the branches and leaves of pumpkin grow too big, it will affect the growth of pumpkin, which will lead to the appearance of melted pumpkin. Therefore, pruning and tendrils should be done in time. If it is to promote the growth of pumpkin, it is generally done at the stage of 6~8 true leaves to promote the germination of

side branches, and the number of side tendrils is generally 3~4. In addition, according to the needs of pumpkin planting, pruning and tendrils can be carried out properly, leaving side tendrils. Pumpkin belongs to cross pollination, which requires insects to carry pollen to achieve the formation effect of fruiting melons; in rainy days, insects can't carry pollen, which leads to low fruit setting rate of pumpkin. In order to improve fruit setting rate and pumpkin yield, artificial pollination can be carried out, which can effectively prevent the formation of stiff buds and stiff fruits.

6. Pest and disease control

6.1. Selection and treatment of planting soil

If the pumpkin or pumpkin production base is established in a pollution free ecological environment, it is best to carry out rotation. If rotation is not possible, pests in the soil should be effectively killed and pathogens should be reduced before sowing. Common agricultural control practices include disinfection of nursery soil or matrix soil. After being evenly spread with 30~50 kg/ mu of ammonium bicarbonate, it is best to seal it with a film for 5 days (sunny) or 7 days (rainy), and evenly spread 100 kg of quicklime powder per mu of acidic soil. Evenly mix the mixed substrate with 96% must-kill WP60g per m³, seal it with a film for 5~7 days, turn over the pile and ventilate it for 1~2 times in 5~7 days after uncovering the film, and take soil for sowing after the medicine gas is lost.

6.2. Treatment and disinfection of pumpkin seeds

The main purpose is to kill pathogens, select whole seeds to sow, sunbathe in the sun for 1–2 days before sowing, so as to kill epidermal bacteria and improve germination rate, and soak seeds with warm water at 50 °C for 30 min; The temperature was lowered to 30 °C, and the seeds were soaked for 8 h, then the seeds were sterilized with 1% potassium permanganate solution for 20 min. After washing, it is germinated at 28 °C for 48 h, and sown when it is white.

6.3. Sowing of pumpkin seed

It is necessary to early sow in time, plant in proper space reasonably, control field temperature and humidity, and inhibit the occurrence of diseases. Generally speaking, pumpkin likes cool climate, which is suitable for sowing from February to March every year. Silver black double-sided plastic film mulching cultivation is promoted, with silver on the top and black on the bottom, which can protect soil moisture and avoid aphids, inhibit weed growth, reduce irrigation and prevent root diseases and insect pests. Practice has proved that the cultivation of pumpkin with wide border and double rows is suitable, which can not only ensure the yield, but also effectively control the temperature and humidity in the field and keep the permeability in the field.

6.4. Better fertilizer and water management and disease resistance

Scientific fertilization and irrigation can not only improve the growth of crops, but also improve the disease resistance of crops. Farmhouse fertilizer, organic fertilizer and biological fertilizer are the main fertilizers. Sediment polluted by industrial “three wastes” and urban domestic waste is prohibited, and wastewater is prohibited from being used for irrigation. The use of nitrogen fertilizer and other chemical fertilizers can be controlled, which can reduce the content of heavy metals, nitrate and nitrite, reduce the amount of harmful substances, use enough basic fertilizer, and irrigate the roots with potassium sulfate and urea after the melons sit firmly. In addition, through the comprehensive agricultural control, physical control and chemical control of diseases and insect pests which are easy to produce in different growing seasons, the pumpkin grows well and the fruit is pleasant.

7. Precautions of pest control

Firstly, it is necessary to avoid high treatment and low prevention, and fight drugs indiscriminately. The occurrence and development of pumpkin diseases and insect pests need certain environmental conditions. Creating cultivation conditions suitable for pumpkin growth but not promoting the occurrence and development of pumpkin diseases and insect pests can fundamentally prevent the occurrence of pumpkin diseases and insect pests. When environmental conditions are not controlled properly, diseases and insect pests are easy to occur. When diseases and pests occur, reconnaissance often causes huge losses in production. In the years when diseases, such as bacterial genes, mold, powdery mildew and Fusarium wilt occurs, if production factors cannot be effectively improved, it is difficult to cure these diseases, and if it is serious, it will lead to production suspension. In addition,

no matter which diseases are caused by fungi, bacteria or viruses, or pathological diseases caused by hormone deficiency or pests, only subjective judgment or experience is used for the prevention and treatment of diseases, which are usually delayed due to medication errors. If the disease is found to be controlled as soon as possible, regardless of its toxicity, it can be mixed or suitable for the growth conditions of pumpkin, and its drug concentration, dose and number of addicts will multiply or multiply, which will usually lead to injury, resulting in pesticide residues on plants and fruits, resulting in too many pesticide residues, which cannot be sold or obtained.

Secondly, it is necessary to avoid ignoring the management and operation links, leading to the spread of pests and diseases and endangering the growth of pump- kins. The occurrence and spread of diseases and insect pests include airflow, mechanical transmission, soil transmission, man-made transmission, insect transmission, contact transmission and so on. In management, the transmission route is ignored or not treated at all, so it is impossible to observe the growth of pumpkin fields frequently and find problems in time. Preventive measures can be taken as early as possible to achieve reasonable prevention. For example, the prevalence of powdery mildew depends on humidity and host growth, and humidity is generally beneficial to its prevalence.

Thirdly, it is necessary to avoid not paying attention to the prevention and control of pests and diseases at seedling stage, and it is not thorough to fight drugs. Pumpkin seedlings grow slowly because of their small size and poor resistance to diseases and insects, which often lead to seedling failure or disease outbreak after field planting, resulting in lack of seedlings and broken

ridges. It should strengthen the disinfection of seeds in order to grow strong cuttings, and cause slight damage to roots in the process of transplantation to prevent bacterial infection. It is a hard and meticulous job to fight drugs. The properties of drugs include contact killing, internal absorption and so on. In order to give full play to the efficacy, it is best to start spraying on leaves when the temperature rises to 20 °C.

When leaf diseases happen, the front and back of leaves, stems and inner chambers of small rows should be sprayed evenly; fruit diseases focus on fighting drugs to protect fruits; soil should be considered for soil-borne diseases; the safety interval between pesticide application and pesticide residue prevention must be emphasized.

8. Conclusions

In short, pumpkin has rich nutrition, high vitamin and sugar content especially, which is sweet and delicious. It is not only food, but also can be used as feed to raise cattle with ideal feeding effect. To ensure high yield, pumpkin planting farmers need to master key planting techniques and carry out scientific field management.

Conflict of interest: The authors declare no conflict of interest.

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