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Tawian promotes three key technologies to help greenhouse tomatoes

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Taiwan's Ministry of Agriculture Tainan Agricultural Improvement Station announced three important research and development results to strengthen the sustainable development of greenhouse small-fruit tomatoes.

Among them are integrated pest management techniques (IPM) for greenhouse tomatoes, a disease-resistant tomato rootstock variety called "Tainan No. 1," and a small fruit tomato variety called "Tainan No. 25" that is resistant to storage and transportation. By integrating all the technical components and applications, the industry will be able to enhance its competitiveness and physique.

Chen Yuchu, director of the Tainan District Agricultural Research and Development Center, pointed out that small-fruit tomato varieties such as "Jade Girl" are popular among farmers and consumers. However, their intolerance to high temperatures limits the cultivation season. Coupled with the impact of climate change in recent years, the tomato industry faces challenges such as high temperature adversity, risks of pests and diseases, and imbalance between production and sales. In order to help farmers break through bottlenecks and improve overall efficiency, the farm has long invested in research on facility vegetable and fruit pest management and variety improvement. The three technologies announced today are the core key to leading the industry into a new stage of "low risk, high efficiency, and export potential."

The storage-resistant tomato "Tainan No. 25 " helps the export market

In response to the current situation where farmers are growing too few varieties of small-fruit tomatoes and the pressure from the domestic market, the Tainan farm has launched a new variety, "Tainan No. 25," which is red-fleshed and durable in storage and transportation. It breaks through the storage and transportation bottleneck of existing varieties and has the characteristics of high sugar content, firm flesh, and resistance to storage and transportation. .

The small-fruit tomato "Tainan No. 25" has a red-fleshed oblong shape, with an average single fruit weight of about 11.5 grams; the sugar content is about 9.7 O Brix, and the fruit sugar-acid ratio can reach 25.4, and the flavor is no less than the current mainstream varieties; it is heat-resistant and suitable for Taiwan's spring cultivation environment from March to May, and can be harvested 78 to 87 days after planting, which is different from the current main production period in China; experiments have confirmed that "Tainan No. 25" can still maintain a 70% commercial rate when refrigerated at 5Â°C for 4 weeks. After its launch, it is expected to be promoted in the export market, providing an opportunity for the small-fruit tomato industry to open up export markets.

Integrated IPM pest control technology implements safe and low-drug production model

In response to abnormal climate and increased risks of pests and diseases, the Tainan farm established IPM (Integrated Pest Management) control technology for small-fruit tomatoes in facilities, focusing on the three aspects of "prevention, monitoring, and control" to help farmers effectively control silverleaf whiteflies and viral diseases.

In terms of prevention, the farm emphasizes that facility cultivation should ensure complete isolation, use healthy seedlings and implement field hygiene. In terms of monitoring, yellow sticky papers are placed to regularly monitor the density of whiteflies. In terms of prevention and control, inspections are strengthened within 2 months after planting, virus strains are removed in a timely manner, and natural enemy insects such as tobacco blindness are introduced to control the density of whitefly populations, effectively reducing the labor for prevention and control and the frequency of pesticide application. The simultaneous introduction of sesame and cleome as banker plants for Tobacco tsunamis improves the stability of natural enemy populations and the effectiveness of pest control, thus successfully creating a pest defense line inside the facility. This set of operational technical guidelines has been successfully verified in multiple tomato cultivation fields, which can save nearly 60% of the cost of pesticide control, while increasing the yield by at least 20%, and overall increase the profit by at least 40%, providing the industry with a feasible safe production model.

The eggplant rootstock "Tainan No. 1 " is highly resistant to bacterial wilt, high temperature resistant, and stable for grafting

In response to the bacterial wilt disease that is common in Taiwan's tomato producing areas, the Tainan farm has undergone eight years of systematic breeding and regional trials and successfully developed a new hybrid first-generation tomato rootstock variety "Tainan No. 1". It is the first professional rootstock variety in the country that has stable disease resistance, strong affinity, and adaptability to high temperatures.

The tomato rootstock "Tainan No. 1" has been field-tested in small-fruit and large-fruit tomatoes in major production areas such as Yunlin, Chiayi, and Nantou, showing that it can maintain good growth potential and stable yield of tomatoes under high temperature and disease adversity, has stable disease resistance to tomato bacterial wilt, and can maintain the quality and yield of tomatoes. This variety has now been transferred to Jiase Seed Co., Ltd. and Cola Seedlings, and is expected to become the key to improving the safety and efficiency of tomato production in the future.

The Tainan District Agricultural Innovation Station emphasized that the three results published this time are all aimed at implementing field trials and promoting industrial applications, emphasizing "localized R&D", "precision promotion", and "integration of the industrial chain." In the future, we will continue to invest in technology upgrades and industry chain collaboration to achieve the goal of agricultural sustainability and market win-win results.