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Research progress of phyllostachys vivax cv. Aureocaulis

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Abstract. Phyllostachys vivax cv. aureocaulis is a kind of bamboo species widely distributed in China, which has high economic value. This paper summarized the research progress of Phyllostachys vivax cv. aureocaulis in recent years, including biological characteristics, cultivation and propagation techniques, bamboo for shoot and bamboo for Phyllostachys vivax cv. aureocaulis, effective chemical constituents in shoots, branches, leaves and stems of Phyllostachys vivax cv. aureocaulis and their application in breeding. Phyllostachys vivax cv. aureocaulis have high utilization value, especially the value of bamboo shoots, which is mainly shown in: long shoot period, high yield, high fiber content, is a good papermaking raw material; Several aspects that should be paid attention to in the future research are put forward: to strengthen the research on the bamboo resources of Phyllostachys vivax cv. aureocaulis (especially the mother bamboo); to carry out in-depth research on the bamboo use and timber use value; and to strengthen the research on the intraspecific, interspecific and interspecific relationships of Phyllostachys vivax cv. aureocaulis.

Keywords: Phyllostachys vivaxcv. Aureocaulis, biological characteristics, cultivation and propagation techniques.

1. Introduction

Phyllostachys vivax cv. aureocaulis is a widely used ornamental bamboo. In the process of natural growth, the stalk skin color is yellow stalk, green stripes, but the number of stripes, width and position are random, and sometimes even the nearly complete green stalk phenotype, which has high research and appreciation value. At present, the phyllostachys vivax cv. aureocaulis in Jiangxi, Anhui, Zhejiang and other provinces. Bamboo flavonoids are an important kind of secondary metabolic substances, which can be widely found in bamboo plants. They have various biological activities such as antioxidant, anti-tumor, anti-blood pressure and blood lipid [1]. The content of flavonoids in bamboo is an important index to measure the nutritional and economic value of bamboo. This paper analyzes the research status at home and abroad, and looks forward to its future research direction. This research will promote the comprehensive development and utilization of Phyllostachys vivax cv. aureocaulis, accelerate the popularization and application of new technologies in forestry, promote farmers to get rich, and improve the utilization rate of resources and economic efficiency.

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Phyllostachys vivax cv. aureocaulis is a bamboo subfamily and Phyllostachys vivax McClure genus, which is widely distributed in China, mainly in Jiangxi, Hunan, Zhejiang and other provinces. There is only one cultivar of Phyllostachys vivax cv. aureocaulis in China.

2. Biological characteristic

Phyllostachys vivax cv. aureocaulis, one of the major bamboo species in China, is a species of Gramineae. Its characteristic is: Pole wall is thin, without ramose, have apparent knot and bristle, without aerogenic root, there are 2-3 branchlet below knot. Rhizoma Aconitum is usually clumped and distributed in the lower part of hillside or valley [2]. It is often called "Phoenix Bambusa" because of its tall and tall stem, symmetrical structure, long and narrow lanceolate leaves, clear veins and coarse teeth. Phyllostachys vivax cv. aureocaulis is mainly distributed in the tropical and subtropical areas in the south of our country [3].It can grow well in the temperate areas. The bamboo whip of Phyllostachys vivax cv. aureocaulis is relatively developed, which is about 5m in natural conditions. But Phyllostachys vivax cv. aureocaulis is one of the common species in bamboo forest.

3. Cultivation and breeding research

As a precious species of bamboo, the study on cultivation and propagation techniques will be beneficial to its further development and utilization. At present, the cultivation and propagation of Phyllostachys vivax cv. aureocaulis mainly include the following aspects: selection and treatment of the mother bamboo; digging and transportation of the mother bamboo; pruning and weeding of the mother bamboo; digging and planting of bamboo penises; study on the law of shoot emergence of different mother bamboo in different seasons (spring, summer and autumn); study on the law of shoot emergence in different regions (Fujian and Guangxi); study on the time and law of shoot emergence in different regions (Hunan and Zhejiang); and study on the management and management technology of mother bamboo [1].

Grafting propagation can be used in Phyllostachys vivax cv. aureocaulis, but the survival rate of grafting is lower, the operation is more complicated and the cost is higher. Wang Weibin et al proved that the survival rate of grafting with phyllostachys vivax cv. aureocaulis as rootstock was up to 99%. Wang Weibin's cutting propagation can improve the reproductive efficiency of Phyllostachys vivax cv. aureocaulis.

The selection and breeding of Phyllostachys vivax cv. aureocaulis mainly focus on the selection of mother bamboo and cross breeding. The selection of mother bamboo is mainly based on the growth rate, quality and shooting rate of mother bamboo, and the identification of species. The selection and breeding methods of mother bamboo mainly include: traditional breeding method (seed selection and site selection), hybrid breeding method (seed selection, site selection and hybridization) and modern biotechnology breeding method [4]. Through the selection of mother bamboo, the fine bamboo individuals with fast growth rate and high shoot value can be screened out, which can provide fine bamboo species for breeding of Phyllostachys vivax cv. aureocaulis. There are three main breeding methods for cross combination of Phyllostachys vivax cv. aureocaulis: A. BW2×BW1, A.BW2×BW3, B. BW2×B. W3. At present, tPhyllostachys vivax cv. aureocaulis is still in the initial stage, mainly because of the abundant bamboo species [5].

4. Bamboo value

Bamboo for shoot and bamboo for shoot of Phyllostachys vivax cv. aureocaulis have high utilization value. Bamboo for shoot is the main economic bamboo species. Bamboo for shoot can be used in papermaking and building materials. Lin Jigang established a germplasm resource garden of Phyllostachys vivax cv. aureocaulis in Luocheng County, Guangxi Zhuang Autonomous Region, and investigated its bamboo and bamboo species resources. The results showed that the utilization value of Phyllostachys vivax cv. aureocaulis was high, and the yield and economic value of bamboo for shoot and both were high. Zhang Yajun and his colleagues investigated the

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bamboo and bamboo species used in Phyllostachys vivax cv. aureocaulis in Luocheng County, Guangxi, and found that Phyllostachys vivax cv. aureocaulis had different utilization values in different areas [6]. Cellulose, hemicellulose and lignin are the main effective components of the stem of Dioscorea bulbifera, while protein, polysaccharide and cellulose are the main chemical components of bamboo shoots. The cellulose content in the stalk of Phyllostachys vivax cv. aureocaulis was more than 30%, but only about 6% in the bamboo shoot, the lignin content was lower. Therefore, the bamboo stalk of Phyllostachys vivax cv. aureocaulis has high utilization value, which can be used for papermaking, man-made fiber, building materials and knitting, etc. The content of lignin in the culms of Phyllostachys vivax cv. aureocaulis is over 70% [7]. Lignin is mainly synthesized from tetrahydrofuran, so lignin can be used in pharmaceutical industry. In addition, there are a small amount of flavonoids, amino acids, proteins and other mineral components in the culms of feeding chickens, which have high edible and medicinal value. Therefore, bamboo stalk of Phyllostachys vivax cv. aureocaulis can be used as a new health food [8-9].

5. Conclusion

Phyllostachys vivax cv. aureocaulis have high economic value, especially their shoot value, and have high utilization prospect. However, due to its narrow natural distribution and the influence of human activities and climate change, the germplasm resources of the chickens are endangered. Therefore, in order to protect and make better use of this precious species of bamboo, it is urgent to strengthen the research on the resources of Phyllostachys vivax cv. aureocaulis (especially the mother bamboo). The research on intraspecific, interspecific and interspecific relationships of Acanthopanax giganteus has also become the focus of future research.

At present, the research on Phyllostachys vivax cv. aureocaulis and bamboo mainly focuses on its breeding and cultivation, biological characteristics, ecological environment, pest control and other aspects. The research shows that the Phyllostachys vivax cv. aureocaulis has high economic value and ecological value, and plays an important role in China's economic and ecological construction. In the process of research, the biological characteristics and growth rules should be further clarified through different methods and channels, so as to provide scientific basis for its breeding. At the same time, it is necessary to strengthen the research on the comprehensive development and utilization of Phyllostachys vivax cv. aureocaulis, realize the diversified production of bamboo, bamboo shoots, bamboo shoots, bamboo shoots processing and bamboo products processing, and the comprehensive utilization and development of Phyllostachys vivax cv. aureocaulis resources, so as to maximize its economic benefits. In addition, the pest control also needs to strengthen research, and constantly improve the prevention and control technology system. The future research direction is to strengthen the research on the occurrence mechanism and control technology of pests and bamboo.

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