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Performance of single node cutting on propagation of black pepper

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Abstract

Black pepper is most important spice crop know as King of spices and Black gold. Black pepper botanically known as *Piper nigrum* belongs to Piperaceae family grown for its berries since the time immemorial. Now-a-days, pre-rooted cuttings from runner shoots are used in commercial level but they take a longer time to establish due to lack of roots at the nodes. From this study it is inferred that the single node cutting of black pepper treated with 2000 ppm of IBA showed the maximum number of roots and sprouts as well as maximum root length and sprout length. And also it has taken very less number of days for initiation of fifty per cent sprouts. As well as the maximum per cent survivability was observed in this treatment.

Keywords: Berries, Piperine, consortia

1. Introduction

India is known as land of spices, major producer and consumer of spices in the world. More than seventy five species of spices are known to be grown in India. Among the spices black pepper is most important spice crop know as King of spices and Black gold. Black pepper botanically known as *Piper nigrum* belongs to Piperaceae family grown for its berries since the time immemorial. Black pepper is cultivated to a large extent in Kerala, Karnataka and Tamil Nadu and to a limited extent in Maharashtra, North eastern states and Andaman & Nicobar Islands.

Mainly Indian black pepper is preferred in the international market due to its proper combination of pleasant flavour, taste, piperine content and essential oil (Sastry, 1982 and Dutta, 1984) ^[1]. Black pepper is not only used as a condiment but also, widely used in culinary preparations, food processing, and perfumery and as an important ingredient in most of the Ayurvedic medicine preparations (Okaisabor, 1971).

Now-a-days, pre-rooted cuttings from runner shoots are used in commercial level. When hanging shoots are used as planting materials, they take a longer time to establish due to lack of roots at the nodes (Singh and Singh, 1996) ^[5]. This is due to the variation in growing media and cutting from different vines. Production of pre-rooted cutting in light polyethylene bags is the way of producing quality planting material throughout India. Application of growth regulators such as, IBA by dipping the cuttings in the solution has been found to enhance root proliferation (Pillai *et al.*, 1982, Suparman and Zaubin, 1988) ^[4, 6].

With this above background present investigation was conducted at ZAHRS, Brahmavara, Udupi with five treatments and three replications.

Materials and Methods

The research has been conducted at ZAHRS, Brahmavara, Udupi to know the performance of single node cutting on propagation of black pepper. Here in this experiment the portrays are filled with cocopeat enriched with microbial consortia. In this trays single node cuttings of black pepper variety Panniyur 1 treated with different concentration of IBA *viz* 250, 500, 1000, 2000 ppm as mentioned in the table 1. Were planted g. Observations like days taken for initiation of sprouts, sprouting percentage, number of roots, root length, number of sprouts and sprout length was recorded.

The experiment was laid in CRD with 5 treatments and 4 replications, each replications consisting of 10 plants and total of 40 plants per treatment.

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Table 1: Treatment details of single node black pepper.

Sl. No.	Treatment details
T1	Control (Water dip)
T2	250 ppm of IBA solution
T3	500 ppm of IBA solution
T4	1000 ppm of IBA solution
T5	2000 ppm of IBA solution

Table 2: Days taken for initiation of sprouts total survivability.

Sl. No.	Treatments	Days taken for initiation of sprouts	50% of sprouts	Total per cent survivability
1	T1	29	39	66
2	T2	26	37	75
3	T3	23	32	79
4	T4	21	30	86
5	T5	19	26	90
	SE(m)	0.076	0.068	0.053
	CD	0.230	0.207	0.163

Table 3: Performance of single node black pepper treated with different concentration of IBA.

Sl. No.	Treatments	No. Of roots	Root length (cm)	No. Of sprouts	Sprout length
1	T1	13.00	3.20	4.67	11.83
2	T2	20.67	3.47	4.83	12.40
3	T3	21.33	4.67	6.30	13.73
4	T4	33.00	7.94	10.87	14.50
5	T5	37.33	5.73	8.80	17.97
	SE(m)	0.088	0.031	0.036	0.018
	CD	0.267	0.093	0.011	0.054

Results

From the Table 2. It is observed that the treatment 5 *i.e* single node cutting treated with 2000 ppm of IB taken less number of days *i.e* 19 days for initiation of the sprouts. 26 days for fifty per cent of sprouts and highest (90%). Where as in treatment 1 number of days taken for initiation of sprouts was highest (29 days) fifty per cent of the sprouts (39 days) and less per cent of (66%) survivability was observed.

From the Table 3. It is observed that highest number of roots *i.e* 37.33 number and root length 5.73 cm, number of sprouts 8.80 and longest sprout length was observed in T5. This is followed by the Treatment 4. *i.e* single node cuttings treated with 1000ppm showed the second maximum number of roots (33), and maximum root length of 7.94 cm, number of sprouts 10.87 and sprouts length 14.50 cm.

Conclusion

From the above study it is inferred that the single node cutting of black pepper treated with 2000 ppm of IBA showed the maximum number of roots and sprouts as well as maximum root length and sprouts length. And also it has taken very less number of days for initiation of sprouts. And very important thing is the maximum per cent survivability was observed. Now-a-days, pre-rooted cuttings from runner shoots are used in commercial level but they take a longer time to establish due to lack of roots at the nodes. So this will be one of the method farmers can utilize for commercial propagation.

References

1. Dutta PK. Studies on two *Phytophthora* diseases (Koleroga of arecanut and black *International Cocoa, Conf. Areca*, Ghana, Karnataka with special reference of Koleroga of arecanut and black pepper. Ph.D. 1984, 398-404.

2. Nambiar KKN, Sarma YR. Wilt diseases of black pepper. J Pl. Crops. 1977;5:2-103.
3. Okaisabor EK. The mechanism of initiation of pod rot epiphytotic. Proc. 3rd pepper wilt) in Shimoga district, Karnataka state. Ph.D. Thesis, Univ. Agric. Sci.
4. Pillai VS, Ali ABM, Chandy KC.. Effect of 3-indole butyric acid on root initiation and development of roots in stem cuttings of pepper. Indian Cocoa Arecanut and Spices J., 1982;6:79. Research, Calicut, Kerala, 1971: pp.4-5.
5. Singh VB, Singh K. Spices; New Age International (P) Ltd. New Delhi, India 1996, 16-33.
6. Suparman U, Zaubin R. Effect of defoliation, IBA, and saccharose on root growth of black pepper (*Piper nigrum* L.) cuttings. Industrial Crop Res. J 1989;1:54-58.