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Effect of time of pruning and peeling on the bark yield of cinnamon (*Cinnamomum verum* J. Pres.) in Andaman and Nicobar Islands

I Jaisankar, V Damodaran, D R Singh & R Sudha

Division of Horticulture and Forestry
Central Agricultural Research Institute
Port Blair-744 101, Andaman and Nicobar Islands, India.
E-mail: ijaisankar@yahoo.com

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Abstract

An experiment was conducted at Port Blair, Andaman and Nicobar Islands, to study the effect of time of pruning and peeling on the yield of cinnamon (*Cinnamomum verum*) intercropped in an arecanut (*Areca catechu*) garden. Pruning and peeling was carried out at 20 days interval from first week of June to August during both the years. The number of branches (31) and girth (19.98 cm) were significantly higher in 10th July pruning. Bark yield tree⁻¹ (both fresh and dry weight) was also significantly higher during 10th July (4.03 kg fresh and 1.22 kg dry weight) pruning indicating that this period is ideal for pruning and peeling cinnamon in Andaman and Nicobar Islands.

Keywords: *Cinnamomum verum*, cinnamon, pruning, yield.

Cinnamon (*Cinnamomum verum* J. Pres.) (Family: Lauraceae) in its native habitat, grows to a height of about 10 m and has to be coppiced periodically for extraction of bark which is the commercial product. Cinnamon when intercropped in coconut (*Cocos nucifera* L.) and arecanut (*Areca catechu* L.) gardens are coppiced annually, to harvest the bark from the fourth or fifth year after planting. Mature shoots having a basal diameter of 3–5 cm are coppiced at a height of about 12 cm from ground level (Pathiratna *et al.* 2006). Cinnamon trees in these plantations assume a bushy shape with many shoots of varying sizes useful for peeling and extraction of bark. The time of pruning and peeling of cinnamon may vary in different agro climatic zones and plays an

important role to determine the yield and quality. The productivity of cinnamon in Andaman and Nicobar Islands is 0.12 t (Salam 2006) which is far below that of major cinnamon growing areas in India. The low productivity is mainly due to lack of knowledge and skill on selection of correct size of cinnamon shoots and the appropriate time for peeling and extraction of bark. Hence, the present study was conducted to determine the optimum time of pruning and peeling on bark yield of cinnamon intercropped in an arecanut garden in Andaman and Nicobar Islands.

The experiment was conducted at Garacharma Farm, Central Agricultural

Research Institute, Port Blair, Andaman and Nicobar Islands (11° 36''N latitude and 92° 42'' E longitude; elevation 60 m above MSL) during 2007 and 2008. The soils are loose, well drained, generally gravelly loamy to sandy loamy in texture, mostly slightly acidic in reaction and low to moderate in nutrients (NBSSLUP, 1991). The climate is equatorial, humid tropical with temperature ranging from 23.1 to 30.1°C. The average annual rainfall is 3000 mm, distributed over a period of 8–9 months, relative humidity ranges from 71% to 85%. The experiment was laid out in a randomized block design with four replications. The cinnamon seedlings (local) were planted during June 2000 by adopting a spacing of 2.7 m x 2.7 m under 14 year old arecanut garden and maintained as per recommended package of practices (Kumar *et al.* 1987). Pruning and peeling were carried out at 20 days interval from 1st June to 20th August as per the treatments namely, T₁ – 1st June, T₂ – 20th June, T₃ – 10th July, T₄ – 30th July and T₅ – 10th August, respectively. Eight trees were selected for each treatment and accordingly 32 trees were pruned and peeled per treatment. The pruning and peeling was carried out from the selected shoots 18 months old and about 1 m long. The growth and yield parameters namely, plant height, girth, number of branches, fresh bark yield and dry bark yield were recorded for two consecutive years during 2007 and 2008. The extracted bark was dried in partial shade to obtain the final produce of dry bark. The data was statistically analyzed (Panse & Sukhatme 1995).

The time of pruning and peeling did not influence plant height. The number of branches tree⁻¹ and the girth of the tree were significantly influenced by the time of pruning and peeling (Table 1). In general, the number of branches was higher during 2008 as compared to the preceding year. Peeling during 10th July recorded maximum number of branches (30 and 32 during 2007 and 2008, respectively) and girth (20.16 cm and 19.79 cm during 2007 and 2008, respectively). Fresh and dry bark yields were also significantly

Table 1. Effect of time of pruning and peeling on bark yield of cinnamon

Treatment	Plant height (m)		No. of branches		Girth of the tree at 1.37 m (cm)		Bark yield (kg plant ⁻¹)													
	2007	2008	2007	2008	2007	2008	Mean	2007	2008	Mean	2007	2008	Mean	2007	2008	Mean	2007	2008	Mean	
Pruning and peeling date																				
T ₁ -1 st June	3.79	3.69	3.74	24	25	17.24	17.54	17.39	2.46	2.62	2.54	0.72	0.83	0.78	29	31	30			
T ₂ -20 th June	3.97	3.85	3.91	24	27	18.01	17.87	17.94	2.66	2.81	2.74	0.77	0.82	0.80	29	29	29			
T ₃ -10 th July	4.49	4.39	4.44	30	32	20.16	19.79	19.98	3.95	4.11	4.03	1.23	1.21	1.22	31	30	31			
T ₄ -30 th July	3.62	3.38	3.50	25	27	17.11	17.55	17.33	2.66	2.74	2.70	0.75	0.78	0.77	28	28	28			
T ₅ -20 th August	3.79	3.27	3.53	22	24	17.30	16.87	17.09	2.48	2.51	2.50	0.72	0.73	0.73	29	29	29			
SEd	0.30	0.32		2.15	2.09	0.57	0.66		0.07	0.08		0.03	0.02							
CD (P= 0.05%)	NS	NS		4.68	4.56	1.25	1.44		0.16	0.18		0.07	0.04							

influenced by the time of peeling which in turn affected the recovery percentage also. In general, the yield was high during 2008 in comparison to 2007 in all the treatments. This may be due to the better distribution of rainfall throughout the year which probably resulted in better vegetative growth and yield. Peeling during 10th July recorded significantly higher fresh (3.95 and 4.11 kg tree⁻¹) as well as dried bark yield (1.23 and 1.21 kg). Further it was observed that the bark yield showed a declining trend when the pruning and peeling was carried out beyond July. Chomchalow (1996) also reported that cinnamon stems are cut during the rainy season to facilitate peeling of the bark in Sri Lanka.

The present study thus indicated that the period around 10th July is the ideal time for pruning and peeling cinnamon to realize the maximum yield potential in Andaman and Nicobar Islands.

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