

'Goa-1': A Cashew Variety for Goa



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Cashewnut is one of the main commercial crops of our country. In Goa, cashew had been cultivated mostly through seed propagation for long time. Only from the recent past, planting of cashew grafts was resorted to, especially after the introduction of high yielding varieties. The present cashewnut production in Goa state is estimated at 27,000 tonnes from an area of 55,000 ha under cashew crop. It is important to note that still majority cashew plantations in Goa are of non-descript seedling origin with varied levels of nut yield performance, as a result of which the state's productivity is low. However, it is equally important to note that the highly variable seedling progeny, due to continuous open pollination and segregation, obviously possesses the potential genotypes, which could play vital role in boosting the cashew production in the state. Clonal evaluation studies, taken up in view of the above, resulted in the selection of an accession 'Balli-2' for commercial cultivation in Goa State. Considering its nut yield, quality of nuts and apple, the selection was approved for release under the name Goa-1 for cultivation in the state of Goa.

'Goa-1' is a selection derived by clonal evaluation of local accession 'Balli-2', based on superior performance of a promising tree located in village Balli of Quepem taluka in South Goa. The original mother tree was identified for its higher yielding ability of 41.5 kg of nuts at the age of 30 years, besides good quality nut and apple. The details about the variety characters are presented in table 1. Medium to bold nut size (7.41 - 7.92 g) and excellent kernel recovery (29.82 -30.05 %) of export grade (W210 -W240) coupled with higher nut yield are the important features of this variety. The high yielding nature of this selection is attributed to higher number of flowering laterals M² canopy (15.93), male to bisexual sex ratio of 10.02 : 1 and bunch bearing habit (5 - 10 fruits per panicle) whereas the single largest panicle recorded as high as 26 number of nuts per panicle.

The apple characteristics of this selection are far superior compared to the present commercial varieties

grown in Goa which is distinctly advantageous for furniture making industries of the state. The yellow coloured apples are bigger in size (about 70 g) with higher juice contents (66 - 70 %) of 12 °Brix.

The performance at regular spacing of 8m X 8m in clonal progeny orchard is furnished in table 2. The mean yield of the progeny for the last four years was observed to be about 8.5 kg of nuts per tree per year at the age of ten years, while the highest yield of a single tree was observed to be 9.44 kg/tree.

Table 1. Salient features of the variety

A) Plant height (At the age of 10 years)	: > 5.3m
B) Morphological characters	
i) Branching pattern	: Semi intensive
ii) Canopy	: Semi spreading
iii) Leaf size and shape	: Medium, Oblong
iv) No. of flowering laterals M ² canopy	: 15.93
v) Panicle shape	: Broadly pyramidal
vi) Sex ratio (male to hermaphrodite)	: 10.02:1
vii) Number of fruits per panicle	: 5.0 - 10.0



Profuse flowering and bunch bearing in Goa - 1

C) Season

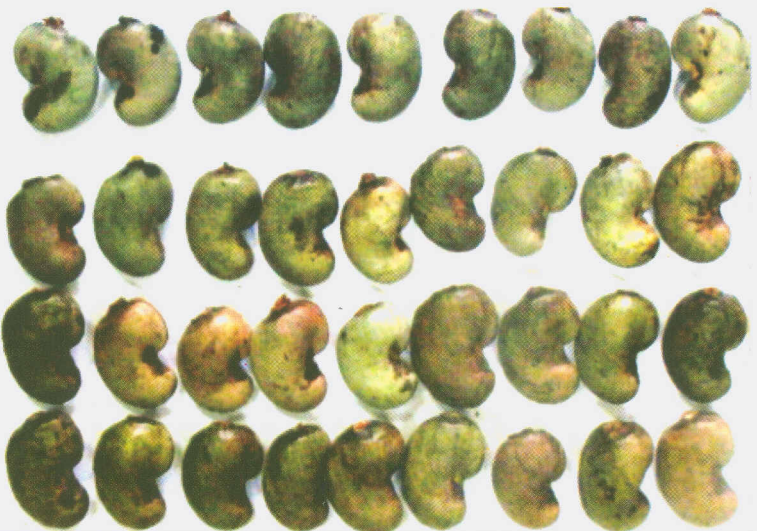
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|-------------------------------------|--|
| i) Time of flowering | : December - February |
| ii) Duration of flowering (in days) | : 90 - 100 |
| iii) Season of harvest | : Mid March - Mid May
(60 to 65 days) |

D) Quality of the produce

- | | |
|-------------------------------------|-------------------|
| i) Nut weight (g) | : 7.41 - 7.92 |
| ii) Number of nuts Kg^{-1} | : 130 - 137 |
| iii) Shelling percentage | : 29.82 - 30.05 % |

E) Quality of kernel

- | | |
|---|---------------|
| i) Kernel weight (g) | : 2.02 - 2.56 |
| ii) Whole kernel count lb^{-1} | : W210 - W240 |
| iii) Kernel grades 180 counts/lb | : 15.63% |
| 210 counts/lb. | : 38.24% |
| 240 counts/lb. | : 26.91% |
| 320 counts/lb. | : 19.19% |
| Others | : Nil |
| iv) Kernel sugars (%) | : 6.16 |
| v) Kernel protein (%) | : 34.93 |
| vi) Total lipids (%) | : 44.91 |



Medium sized nuts with high shelling percentage



Export quality grade kernels W210 - W240

Quality of apple

- i) Apple colour : Yellow
- ii) Apple shape : Cylindrical
- iii) Apple weight (g) : 60.29 - 73.13
- iv) Juice contents (%) : 66.0 - 70.0
- v) T.S.S. of juice (° Brix) : 12.0



Big apples suitable for feni making

Table -2 : Performance of Goa -1 cashew at the age from 7 to 10 years.

Attributes	7 th year	8 th year	9 th year	10 th year	11 th year	12 th year	Mean
Nut yield (Kg/tree)	7.5	8.35	8.69	9.76	9.15	12.05	8.57
Cum. Yield (Kg/tree)*	-	15.85	24.75	34.51	43.66	55.71	
Av. Nut weight (g)	7.8	8.01	7.89	7.98	7.86	7.90	7.90
Shelling (%)	-	29.06	31.10	29.98	30.79	29.9	30.17
Apple weight (g)	-	76.80	69.40	73.85	72.40	70.61	72.01

* Cumulative Yield for four years only.

This is a mid-season variety, with semi-spreading canopy and is less affected by tea mosquito bug which is another desired feature of this selection. The flowering starts right from December and continues up to February with a duration of about 90 -100 days. Season of harvest starts from mid-March to mid-April over a period of 60-65 days.

Considering the overall performance in terms of nut yield, shelling percentage and apple quality, this variety has been recommended at the National workshop on cashew for commercial cultivation in the state of Goa.

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