Quick Response (QR) code labeling

as a quality assurance mechanism for coconut seedlings

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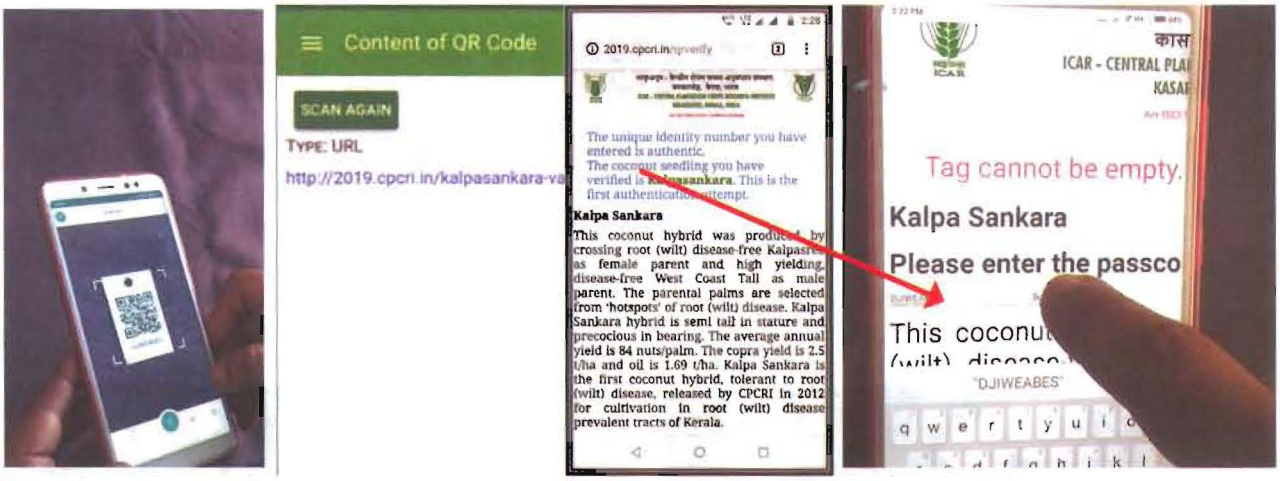
Coconut seedlings with QR code labeling

Coconut is a perennial crop with a lifespan of 80-100 years and an economic life of 60 years or more depending upon the variety, local conditions and management practices. Coconut palm takes about 7-10 years to commence flowering and another five years or more to come to the stage of full bearing. Thus, only after 15 or 20 years the grower is in a position to reap the reward for his investments. If the original planting material used happens to be poor in quality, it will result in the establishment of a plantation giving poor yields and results in loss to the grower as long as the plantation lasts. This indicates the importance of selection of quality planting material for successful coconut farming.

The prevalence of old and senile palms, poor genetic base of majority of palms under cultivation, over populated stands of both coconut and other trees in the homesteads, poor management adopted and severe incidence of pest and diseases are the major reasons for low productivity of coconut plantations in the state of Kerala. Therefore, large scale production and supply of quality planting materials is one of the solutions for enhancing productivity of coconut palms in the state.

Non-availability of genuine planting material of improved varieties is considered as a major bottleneck in enhancing the productivity of any crop. Standard operating procedures for raising coconut



Step 1. Open the QR code scanner app from your phoneStep 2. Hold your phone steady for 2-3 seconds towards the QR Code you want to scan, Step 3. Once the code is scanned, you will be directed to open a link which will reach to a website (2019.cpcri.in). In the website you will be prompted to enter passcode and Step 4: Enter the passcode

seedlings are not practiced by many private coconut nurseries and there is no check on the quality even at the time of distribution of seedlings. Many unauthorized nurseries sell coconut seedlings under the pretext that the seed nuts were collected from ICAR-CPCRI, Agricultural Universities or CDB Farms. There are some other who pretend as agents of research institutes and collect advance from farmers and cheat them by issuing bogus bills. So ICAR-CPCRI, Regional Station, Kayamkulam was forced to come out with a mechanism to ensure the genuineness of the coconut seedlings distributed to farmers.

With a view to ensure availability of genuine and quality planting material, ICAR-CPCRI has come up with Quick Response (QR) code tagged coconut seedlings.

What is QR code: QR code system was invented by Masahiro Hara in 1994. Initially it was used to track vehicle parts during the manufacturing process. Now, QR Codes are a popular marketing tool, allowing users to quickly access websites and other media. A QR Code can contain such things as text, a URL, an SMS or a phone number. QR codes are one of the easiest ways of providing information to customers and other individuals, allowing them to extract valuable data with just scanning the code with the help of an optical reader. They offer endless possibilities, as their functionality is versatile.

Development of QR code labels for coconut seedlings: Initially coconut seedlings issued from ICAR-CPCRI were labeled using labels made out of tin/aluminum sheets, which were tagged onto leaf petioles and only the variety name was marked on the label. During 2016, ICAR-CPCRI developed labels with ICAR-CPCRI emblem and variety name on one side and QR code on other side and the label was laminated. On scanning the QR code with the QR code scanner, user will get information regarding particular variety and its management practices. The defect of this QR code label was that on continued exposure to sunlight and rain, the label gets damaged after 8-12 months. In the subsequent year (2017), a modified version of QR code was developed where the material used for printing the label was made from plastic laminated sheet and each label had a password (alphanumeric) which was printed just below the QR code (so as to restrict the access of information to users who purchased CPCRI seedlings). This password can also be treated as Unique Identification Number (UID) which is specific to each coconut seedling. A plastic tie of 15 cm length is available in the label having auto locking facility and is tamper proof. The QR code was developed in collaboration with M/s Resnova Technologies Pvt. Limited, a Kochi based startup. Mr. Ajith Asok (Director, M/s Resnova Technologies) was associated with development of the QR code labels for coconut seedlings.

How to use QR code?

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140th meeting of Coconut Development Board

The 140th meeting of Coconut Development Board was held on 22nd December 2020 under the Chairmanship of Smt.G. Jayalakshmi IAS, Chairman, Coconut Development Board through video conferencing. Members of the Board; Shri G.S. Basavaraj, Member of Parliament (Lok Sabha), Dr. Anitha Karun, Director, CPCRI, Shri K.R. Uday Bhaskar, Principal Commissioner, Central Excise, Customs & Service Tax, Kochi, Shri Naba Kishore Tad, Deputy Director of Horticulture, Government of Odisha, Shri Kuldeep Singh Gangar, Secretary(Agriculture), Department of Agriculture, Government of Goa, Dr. B.Ramakichenin @ Balagandh, Director, Directorate of Agriculture & Farmers Welfare, Govt. of Puducherry, Shri P. Reghunath, Kerala, Shri K. Narayanan Master Kerala, Shri S.V. Muthuramalingam, Tamilnadu, Shri Guruswamy D, Karnataka and Shri H L Aswathnarayana, Karnataka, Shri. Rajeev Saraswat, Under Secretary, MOA& FW, Government of India (representing Shri. B Pradhan IAS, AS&FA, MOA& FW, Government of India) Smt. K Premalatha,

Deputy Director, Coir Board, representing Chairman, Coir Board and Shri. B N Prasad, Joint Director, Horticulture (representing Director of Horticulture, Government of Karnataka) attended the meeting. Shri. Saradindu Das, Chief Coconut Development Officer and Shri. R. Madhu, Secretary, Coconut Development Board also attended the meeting.

(2019.cpcri.in). In the website you will be prompted to enter passcode

Step 4: Enter the passcode

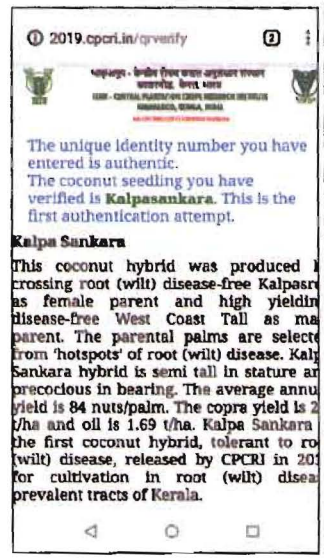
As you enter the passcode (the unique alpha numerical code imprinted on the reverse side of the label), the uniqueness and genuineness of the seedling will be displayed as 'The unique identity number you have entered is authentic. The coconut seedling you have verified is ..... (respective name of the variety). This is the first authentication attempt.

Along with this, the details of the variety and cultivation practices to be adopted are also displayed.

If the label is scanned for the next time, the information on first authentication attempt will not be displayed indicating that the particular label has been already scanned previously.

The unit cost for QR code affixed labels will be Rs. 4-5. Considering the hefty cost of planting material which ranges anywhere between Rs. 200-500, this cost incurred to ensure quality will serve to cleanse the system wherein distribution of spurious seedling is quite rampant.

Future prospects: Attempts have been initiated to include traceability upto mother palm level (to track the source of seed nut/mother palm from which each seedling is produced). Towards this direction, a GPS enabled digital database of all mother palms has already been created. Digitally marking each seed nut



right from harvesting stage and later during sowing in nursery beds will have to be adopted. Finally the selected seedling fulfilling all selection criteria alone will be labeled so that farmer scanning the QR code can track details like variety, mother palm source, nursery location, seed nut harvest date, age of the seedling after sowing. To realize the above objective, convergence of information and communication technologies (ICT), cloud computing and data science is the need of the hour. Genuineness of the coconut seedlings and its quality can be assured through such certification/labeling mechanism. ■