



APPLICATIONS UNDER EXAMINATION

BANANA

BANANA (*Musa acuminata*)

Proposed denomination: 'QCAV-4'
Application number: 21-10584
Application date: 2020/06/19 (priority claimed)
Applicant: Queensland University of Technology, Brisbane, Queensland, Australia
Agent in Canada: Smart & Biggar LP, Vancouver, British Columbia
Breeder: James Langham Dale, Queensland University of Technology, Brisbane City, Queensland, Australia
Robert Maxwell Harding, Queensland University of Technology, Brisbane City, Queensland, Australia
Anthony Peter James, Queensland University of Technology, Brisbane City, Queensland, Australia
Harjeet Kaur Khanna, Queensland University of Technology, Brisbane City, Queensland, Australia
ennifer Kleidon, Queensland University of Technology, Brisbane City, Queensland, Australia
Upendra Kumar Singh Shekhawat, Queensland University of Technology, Brisbane City, Queensland, Australia
Mark Henning Smith, Queensland University of Technology, Brisbane City, Queensland, Australia

Note: The applicant has requested an exemption from compulsory licensing to allow time to multiply and distribute propagating material of the variety. If the exemption is granted, it may be allowed for two years from the date rights are granted for the variety.

Variety used for comparison: 'Cavendish Grand Nain'

Summary: *The plants of 'QCAV-4' are highly resistant to Fusarium wilt tropical race 4 (TR4) whereas the plants of 'Cavendish Grand Nain' are highly susceptible to Fusarium wilt tropical race 4 (TR4).*

Description:

PLANT: triploid, compact crown, drooping growth habit

PSEUDOSTEM: absent or weak tapering, purple, medium to strong intensity of anthocyanin colouration, weak overlapping sheaths, purple inner side of basal sheath

PETIOLE: curved outwards attitude of wings at base

LEAF BLADE: both sides acute shaped base, green midrib on lower side, medium waxiness on the lower side, no glossiness on upper side

PEDUNCLE: large diameter, pubescent, medium to strong curvature

MALE INFLORESCENCE: narrow ovate shape, closed or slightly opened bracts

BRACT: orange red inner side, broad acute shaped apex

RACHIS: vertical male part, weak prominence of scars, absent or weak persistence of bracts, persistent hermaphrodite flowers

BUNCH: cylindrical shape, medium compactness, many hands, fruit moderately turned up

FRUIT: evenly curved, moderate longitudinal ridges, medium length, medium width (excluding ridges), truncate shaped apex, greenish yellow colour of peel before maturity, medium adherence of peel, persistent floral organs

FLESH: soft

RESISTANCE TO DISEASE: highly resistant to *Fusarium* wilt tropical race 4 (TR4)

Origin and Breeding: ‘QCAV-4’ is a transgenic variety produced from embryonic cell suspensions generated from immature male flowers from the bell of ‘Cavendish Grand Nain’ at Queensland University of Technology, Brisbane City, Brisbane, Australia in 2004. The resultant cells were regenerated into whole plantlets and multiplied. The presence of transgenes was confirmed by Polymerase Chain Reaction. Plantlets were transferred to Darwin Banana Farm in Darwin, North Territory, Australia. Plants were grown where ‘Cavendish Grand Nain’ plants were previously grown and had been severely affected by *Fusarium* wilt tropical race 4. Plants were regularly inspected for *Fusarium* wilt tropical race 4 symptoms over a three-year period. ‘QCAV-4’ was selected in June 2019 based on morphological and molecular analysis for resistance to *Fusarium* wilt tropical race 4.

Tests and Trials: The detailed description of ‘QCAV-4’ is based on the UPOV report of Technical Examination, application number 2020121, purchased from the Plant Breeders Rights Office, Intellectual Property Australia, Woden, Australia. The trial was conducted in Lambells Lagoon, Northern Territory, Australia, from 2018 to 2022.



Banana: ‘QVAC-4’



'QCAV-4'

'Grand Nain'

Banana: 'QCAV-4' (left) with reference variety 'Cavendish Grand Nain' (right)



Banana: 'QVAC-4'