and pedical attachment. Treatment with sulphate of potash enhances colour and brightness of the berry skin and also suppresses its discolouration during extended vine ripening. There will be improved shelf life for better marketability. Also these treatments may be useful even in preparation of "Raisins" of high quality.

xix. **Shelf life/keeping quality :** 5-7 days after precooling. Extra care in handling and packaging is however required for export purposes. Ponnet packing with suitable grape guards ensure better handling & display in markets.

xx. **Cold storage :** Can be stored up to 60 days at 2-4 °C with 90% RH.

xxi. **TSS content :** 16-18 °brix

xxii. **Total acidity :** 0.45-0.55 %

xxiii. **Consumers' preference :** Very good demand in European markets and also for Indian metro-bazaars, super markets, Middle East and South East Asian Countries.

Manjri Naveen : Farmer's point of view
A new Grape for export purpose

1. This is a clonal selection from the centennial seedless of University of California, Davis, California, USA.
2. The variety is early ripening by about 20-25 days as compared to Thompson Seedless.
3. This variety has less of labour requirement due to self thinned bunches, balanced canopy and is also moderately tolerant to downy mildew. Hence, shoot thinning, bunch thinning, berry thinning etc. are not required. Even the use of bioregulators like GA_3 and CPPU is restricted, recommended concentration should be strictly followed.
4. It has natural bold berries and has high recovery of exportable fruits > 90% as compared to 55-60% from Thompson Seedless.
5. Because it is early maturing variety, it adds to the fruit basket instead of replacement of Thompson Seedless, so that the packing houses and cold storage units can be employed for longer period.
6. Over all there is a saving of nearly 50-60 per cent manual labour required for various operations in the vineyard for this variety as compared to Thompson Seedless.
7. Presently this variety fulfils all the standard requirements for table grape suited to more or less for export markets.

Extension Folder No. 35

Prepared by :
Dr. G. S. Karibasappa, Principal Scientist (Hort.)
National Research Centre for Grapes, Pune - 412 307

Published by :
Dr. P. G. Adsule, Director
National Research Centre for Grapes, Pune - 412 307.

December, 2009 **Price Rs. 10/-**

For further details contact :

NATIONAL RESEARCH CENTRE FOR GRAPES
P.B. No.3, Manjri Farm P.O., Solapur Road
Pune - 412 307, Maharashtra, India
Tel. : 020-26914245 / 5573 / 5574 • Fax : 020-26914246
Email : dirnrcg@gmail.com

Printed at : Flamingo Business Systems, Tel. : 020-24214636. Email : flaminbs@vsnl.com

MANJRI NAVEEN

National Research Centre for Grapes, Pune
(Indian Council of Agricultural Research)

A green seedless table grape clonal selection made at the National Research Centre for Grapes, Pune, from 'Centennial Seedless' during the year 2002. The cultivar has been tested under multi-location field trials as 'A17-3' for the last 5 five years. The trials were conducted on pilot scale at Khedgaon, Dindori Taluk Nashik District, Roha, Daund Taluk, Pune district and at NRCG, Pune The fruit has been preferably accepted in European and Indian metro markets.

It has the distinct features of branched clusters with uniform oval, bold and crisp berries. Normally it does not require extensive GA application for pre-bloom bunch elongation as is done in Thompson Seedless and its clones. It has natural loose bunches with natural bold berries (18+ mm dia.). The clusters are medium big in size and well filled with light to moderate compactness. Precise application of GA_3, CPPU, BAP are however, required to achieve the extra large berries and good berry adherence for export purposes.

The vines attain optimum canopy vigour with dark green, thick and deeply lobed leaves. Fruiting buds are located on 5-7 position from the base of cane and 1-2 bunches appear for every shoot. Normally the veraison starts after 90 days from pruning and require another 25-30 days for harvest. The optimum ripe fruit must have 16-18 °brix with 0.45 - 0.55% total acidity. The fruits will be ready for harvest between 115-120 days after pruning being early maturing variety. The ripe berries are sensitive to hot climate and do not benefit by extended harvest, hence timely harvesting during cool season is essential. Keeping quality is as good as Thompson Seedless.

Proper plant protection during later stages of berry development should be undertaken for harvesting healthy fruits. The bunches do not require extensive manual berry thinning and dipping operations as required in other table grape cvs, such as Thompson Seedless and its clones. Thus the cost of production in this cultivar is low. The vineyards of this cultivar usually exhibit healthy, uniform dark green and moderate thick canopy. Normally fruit yields from the mature vineyard of 4-8 yr old may be obtained 25 tons per hectare as evident from the farmer field trials.

II. VINEYARD MANAGEMENT

i. **Planting time :** Rootstock DogRidge can be planted in February and wedge grafting can be done in September with 2 node bud sticks.

ii. **Practices :** Spacing and training : Vines trained on wide angle Y trellises spaced between 3 m between rows and 1.8 m between plants. Feritlizer dose ; 50 tons FYM along with 180: 250: 250 kg NPK per hectare. To be applied in split doses, 50 percent during vegetative phase and 50% during fruiting phase.

iii. **Reaction to diseases :** Moderately tolerant to downy mildew and anthracnose but susceptible to powdery mildew during later stages.

iv. **Reaction to Pests :** The developing berries are susceptible to thrips damage. Some evidence of attack of jassids/leaf hoppers on leaves may be apparent.

v. **Reaction to weather conditions :** Hot humid days are not conducive for fruits, hence protect the bunches in the canopy under shaded microclimate. Provide shade nets above the trellis between two rows. The berries are rarely affected by pink disorder which is otherwise common in Thompson Seedless and its cultivars.

III. VINE PERFORMANCE

i. **Time taken for bud burst :** Medium to late, i.e., 14-18 days after fruit pruning done during 1st or 2nd week of October. For even bud burst & sprouting use of H_2CN_2 @ 1.5% is recommended.

ii. **Days to flowering :** 28-34 days after fruit pruning

iii. **Inflorescence per shoot :** 1-2

iv. **Bunch size & shape :** 455-650 g, winged conical.

v. **Bunch density :** Medium, densely distributed berries, pedicels not visible

vi. **Berry size :** 18 mm naturally bold, but can get even bolder upto 22 mm by dipping GA_3 5 ppm + 0.25 - 0.50 ppm CPPU (at 6-8 mm dia.)

vii. **Pedicel thickness & attachment :** Dip 10 ppm of BAP or 10 ppm of NAA at pre veraison stage (14-16 mm dia).

viii. **Single berry weight :** 4.0-5.0 g

ix. **Berry Shape :** Oval to elliptic

x. **Berry skin colour :** Amber green to light green

xi. **Berry juice content :** 60-62 %

xii. **Berry pulp :** Firm and crisp

xiii. **Berry flavour :** Vanessa / pleasant muscat flavour.

xiv. **Time of berry ripening :** 115 -120 DAP (Early)

xv. **Bunch length & spread :** Long and spreading type

xvi. **Berry skin thickness** (of epidermis plus hypodermis) **:** Thick (>250 µm)

xvii. **Berry pedicel length :** 8-10 mm

xviii. **Improved berry attachment and quality :** Berry attachment in natural fruits is below average, it can be improved by

- i) Individual cane girdling at 3-4 mm berry stage
- ii) Spray/dip in 5 ppm GA_3 + 3 ppm BAP at 3-4 mm stage
- iii) Spray sulphate of potash 5 g/L at 3-4 mm and at preveraison stage.

These treatments will improve the rachis elongation, flexibility