

# FRESH NOTES

A TECHNICAL UPDATE PUBLISHED BY HORTGRO SCIENCE

## Changing from the 11 mm to the 8 mm penetrometer plunger to determine harvest maturity on certain late nectarine cultivars

### Background

The 11 mm penetrometer plunger has been used for many years in South Africa to determine flesh firmness at harvest as a maturity parameter for Nectarines. This is in contrast to most fruit producing countries using an 8 mm plunger for stone fruit.

Many of the new late nectarine cultivars reach full harvest maturity, based on TSS, skin colour and taste, at a stage when the fruit are relatively firm. This presents problems such as cracking of the fruit and difficulty in determining the correct maturity at harvest when the 11 mm plunger is used to determine flesh firmness. This in turn may lead to rejections on some of the late nectarine cultivars as flesh firmness readings may be too high. Following requests by producers, ExperiCo was commissioned by Hortgro<sup>science</sup> to determine if the 8 mm penetrometer plunger could be used to accurately determine flesh firmness, mainly for use on late nectarines cultivars.

### Findings and recommendation

Trials conducted over three years on eight Nectarine cultivars proved that the 8 mm plunger can be used to accurately determine flesh firmness, at various maturities, on Nectarines. The advantages compared to the 11 mm plunger were:

- Less variability in firmness readings
- No cracking of firm fruit when firmness readings were taken
- Easier interpretation of feedback results from surveyors in receiving countries because they use an 8 mm penetrometer plunger to determine flesh firmness on arrival.

After consultation with various role players and industry bodies, a decision was made to change to the 8 mm penetrometer plunger to determine flesh firmness for late nectarine cultivars. Flesh firmness at inspection on cultivars listed in Table 1 will be determined from 2019 with an 8 mm penetrometer plunger.

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**Table 1:** Cultivars that will be inspected for flesh firmness from 2019 onwards using an 8 mm penetrometer plunger

AUGUST BRIGHT	GIANT PEARL	ROYAL BRIGHT
AUGUST GLO	GOLDEN BRIGHT	SEPTEMBER BRIGHT
AUGUST RED	GRAND PEARL	SEPTEMBER RED
AUTUMN BRIGHT	HONEY ROYALE	SHIMMER PEARL
BELLA NOVA	NECTADELICIOUS (REGAL'N™)	SNOW PEARL
BELLA ROSA	NECTAGALA (REGAL'N™)	SUMMER FIRE
BRIGHT PEARL	NECTALADY	SUMMER PRINCE
BURNECTFOUR	NECTAPRIMA (REGAL'N™)	SUNGRAND
DIAMOND ZEE	NECTARCRISP (REGAL'N™)	VIKING PEARL
FANTASIA	NECTAREXQUISE	ZAIGINA
FIRE SWEET	NECTARJEWEL (REGAL'N™)	ZEE GLO
FLAMEKIST	REGAL PEARL	

The cultivar list was compiled using inspection data of the 2017 and 2018 seasons. Listed cultivars to be measured with an 8 mm penetrometer plunger, with a maximum standard of 6,3 kg, with the exception of Summer Fire at 7,5 kg, and a minimum of 2,5 kg. The draft standards will be amended.

Cultivar owners who want to add cultivars to the list for inspection with the 8 mm penetrometer tip are requested to contact Mr Richard Hurdall at Hortgro<sup>science</sup> at the following E-mail address:

[Richard@Hortgro.co.za](mailto:Richard@Hortgro.co.za). Alternatively, notify DAFF by 2 January 2019 as per draft standards notified by DAFF.