Phytonova Pty Ltd

Company Overview

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Phytonova Pty Ltd
PO Box 119
Richmond Post Shop
RICHMOND NSW
Australia 2753

Telephone: 61 416 219 750
61 7 3870 2080
Facsimile: 61 7 3870 3209

COMPANY OBJECTIVE AND BACKGROUND

The ability to deliver high quality fruit to the market earlier in the season than is normal provides an immediate commercial advantage while also creating the longer-term advantages associated with breeding varieties that will cope better with global warming.

Using natural breeding processes, Phytonova is improving and commercialising high value woody plants[1] for fruit, timber and ornamentals.

The Company was founded in 2004, as a spin-off from University of Western Sydney ("UWS") and its Centre for Horticulture and Plant Science ("CHAPS"), after funding was secured from SciVentures, one of the four Australian government licensed pre-seed funds. SciVentures and UWS are the current shareholders in Phytonova.

Phytonova's main competitive advantage is founded in:

- Proprietary (patents pending) breeding methods that enable Phytonova to develop better plants, faster, and with more specificity than traditional techniques allow
- Exclusive access to a unique, collection of germplasm, gathered from around the world over the last three decades, and currently located at CHAPS.
- Trade secrets, and know how developed over several decades.

Through the application of proprietary breeding methods, the company can greatly reduced the time required to breed superior plant varieties that accurately meet particular market needs.

Currently, Phytonova is mainly exploiting traits related to early maturity and improved eating quality in stone fruit and kiwifruit. It is successfully commercialising a number of its varieties through licenses and testing agreements in Australia and overseas. In the near future, Phytonova will extend product offerings to include low-chill cherries, fast growing cabinet timbers (walnut) and ornamentals (ornamental cherry, tropical camellia, clivia), as well as the development of new varieties, designed to meet particular market needs.

The company has successfully demonstrated the value of its breeding programme through the release of more than sixty (60) varieties that incorporate the unique characteristics of:

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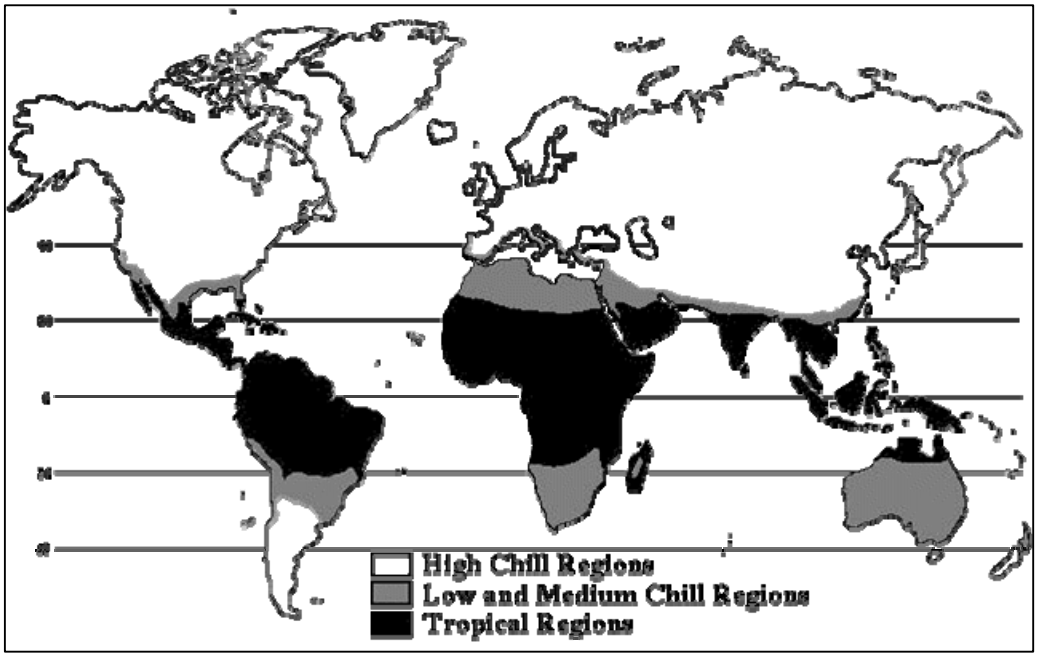
[1] A woody plant is a plant having hard, lignified tissues or woody parts especially stems may include stone fruit, fruiting species, timber trees, ornamentals, etc.

- A lower chill requirement, and thus an increased geographic range of production (Exhibit 1). Phytonova varieties are now being grown commercially from southern Queensland to northern Victoria and the south of Western Australia (as far north as Carnarvon and south to Donnybrook)
- Earlier maturing fruit, relative to traditional varieties, thus promising higher market prices.
- Fruit taste and quality similar to that found in fruit at the peak of the market cycle, thus promising consumer acceptance
- Faster growth than related varieties, ensuring shorter times to first commercial harvest (timber). Phytonova walnut selections grow up to four times faster than existing varieties (some of these selections offer potential as rootstocks in commercial walnut orchards).

Exhibit 1: Geographic Range of Phytonova Varieties (based on latitude)



Note that factors other than chill are also important in determining suitable production areas for stonefruit

The impact of global warming will accelerate the demand for low chill plant varieties as, what are now temperate (high chill) regions (the white areas in Exhibit 1), become unsuitable for growing traditional cool climate plants. The CSIRO predicts that Australia will experience an increase in average temperatures of between 0.4°-2°C by 2030. CSIRO estimates that an increase of 1°-2°C in average temperatures will be sufficient to make existing apple varieties unviable in Australia (due to a lack of chilling). A similar scenario faces the traditional mid-high chill stonefruit varieties.

In Exhibit 1, the grey areas (Low-Medium chill) will expand South and North under the influence of global warming, expanding the areas suited to growing Phytonova varieties.

A number of stone fruit varieties have already been planted in commercial orchards in Australia, while the next generation of varieties is being tested in Australia and overseas.

The Company has a well-developed capability to rapidly breed new varieties with market-specified characteristics. In addition, Phytonova has undertaken extensive research into low-chill cherries, one of the most highly sought fruiting crops. The Company expects to make a successful selection later in 2006 for the release of several varieties of commercially viable, warmer climate, early season cherries.

Exhibit 2 provides an overview of the range of products currently available and under development.

Exhibit 2: Phytonova Product Opportunities

Global market segments	Availability	Status
Fruit		
- Low to medium chill stone fruit	Now	Under production in Aust. In test in Europe
- Low to medium chill kiwifruit	Now	In test in Italy; Entering Test in Aust. & RSA
- Low to medium chill cherries	1 – 3 years	-
Ornamentals		
- Warm climate cherry	Now	Commercially available
- Warm to tropical climate camellias – yellow, orange and apricot colours	Now & ongoing	Available in small quantities
- Christmas bells - pure white	2 - 3 years	-
- Clivia - pure white	1 - 2 years	-
Timber		
- Warm climate fast growing walnut	Now & ongoing	Available in small quantities
- Accelerated growth sandalwood, teak, ebony, balsa	5 - 7 years	-
Rootstock		
- Stonefruit – suited to heavier soils	Now	Available for test
- Cherry – to advance fruit maturity in traditional varieties	Now	In test in Aust.
- Walnut – to enhance tree growth	Now	Available for test

THE BREEDING PROGRAMME

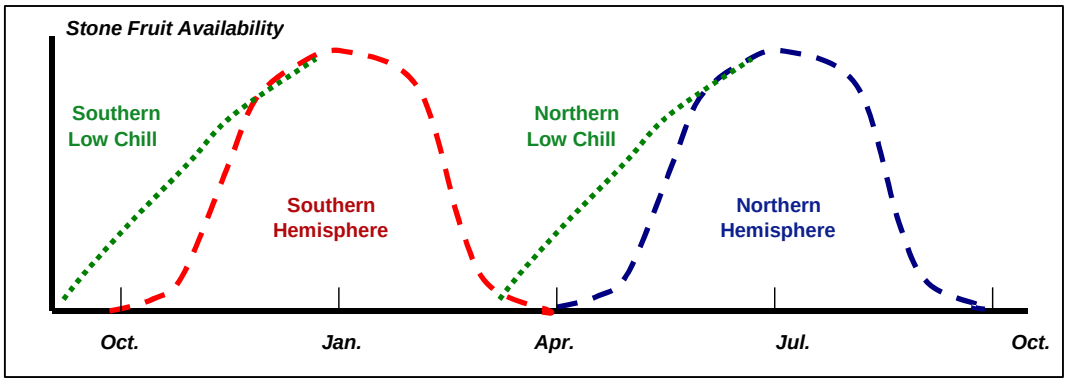
Phytonova's proprietary breeding technologies are based on natural selection processes that do not involve the use of genetic engineering techniques.

The stone fruit breeding program is currently focused on the early part of the growing season and aims to fill the 6 – 8 week gap between the Northern and Southern Hemisphere supply seasons (Exhibit 3). Similarly, Phytonova kiwi fruit will come onto the market approximately two months before other commercially available varieties.

Phytonova's market research indicates that there is unmet demand for new stone-fruit varieties that have improved fruiting characteristics and which can be made available during the period before peak season varieties are available in the market.

While stone fruit shipments between the northern and southern hemispheres are increasing, and permit nearly year-round availability of stone fruit, there are still gaps between the end of the season in one hemisphere and the onset of early varieties in the other hemisphere (Exhibit 3).

Exhibit 3: The Stonefruit Supply Cycle



Phytonova is one of the world's very few plant breeding companies that have concentrated on the development of very early season varieties, and now has the germplasm resources to continue this breeding work.

As a rule of thumb, the breeding programme is aiming to produce varieties that mature early enough for fruit to be harvested and sold before Christmas in the Southern Hemisphere.

The current product range includes:

- Blood plum
- Yellow flesh plum – black or red skin

- Peach – yellow or white flesh
- Peento – yellow or white flesh
- Nectarine – yellow or white flesh
- Kiwifruit – green flesh.

All the varieties in the range are protected by one or more mechanisms, including Plant Breeder's Rights (PBR), trademark and patents. Further, Phytonova is in the process of establishing a genetic fingerprint of all its varieties as another layer of intellectual property (IP) protection.

PHYTONOVA BUSINESS MODEL

The Company's objective is to manage the availability of Phytonova varieties so as to avoid the 'commodity trap'. This trap, driven by over production relative to market demand, regularly afflicts agricultural products, creating a 'boom-bust' cycle. Overcoming this cycle can only be achieved through proper management of the production system.

Phytonova achieves this by:

- Working as close as possible to the consumer end of the value chain
- Maintaining tight control over the IP inherent in the varieties by appointing a limited number of Nurseries to produce trees. There are two such nurseries in Australia
- Appointing a limited number of Licensees who are allowed to market fruit from Phytonova varieties. There are four such Licensees in Australia, all of whom have a vested interest in ensuring that the integrity of the system is maintained
- In consultation with Licensees, setting an upper limit on the number of trees, of any one variety, that may be planted in a particular region so as to optimise the supply-demand balance
- In consultation with Licensees, appointing a limited number of growers who are allowed to grow the varieties. Again, these growers have a vested interest in ensuring the integrity of the system remains intact
- Monitoring the production and sale of fruit to detect any breaches in the system, and punishing any breaches that are detected. This ensures that those growers and marketers involved in the system continue to receive maximum benefit from their involvement
- Collecting and sharing information to assist those involved (growers, marketers and nurseries) to improve their operations
- Giving those involved in the system first access to new varieties

- Recognising that the Company only makes money when the growers are making money
- Providing ongoing training and support to growers involved in the system.

The Phytonova business model relies on developing close working relationships with market partners. Through the successful use of this approach, the company will be in a strong position to understand and react to changing trends in consumer tastes in terms of desired fruit characteristics.

To support the ongoing breeding programme Phytonova collects royalties at two levels:

- A once only tree royalty is paid for each tree that is planted
- A production royalty is paid as a percentage of the wholesale value of fruit sold each year.

CURRENT SITUATION

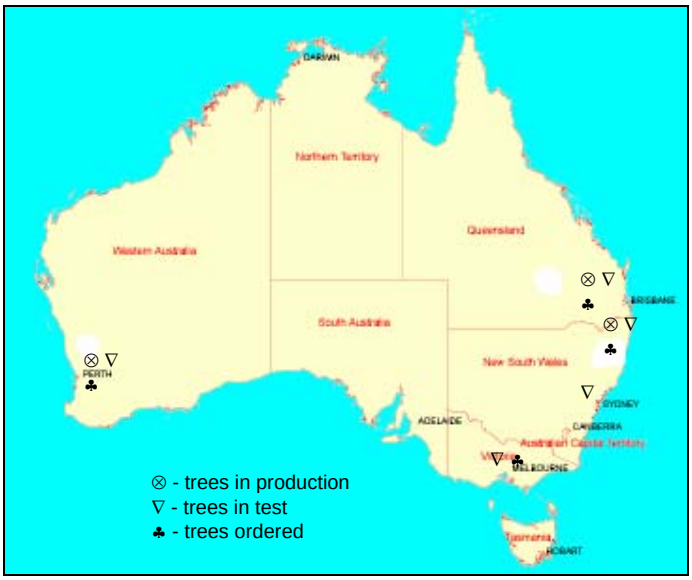
Phytonova varieties are in or entering commercial production and/or testing at a number of locations, including:

- Eastern Australia
- Western Australia
- Europe – France, Italy, Spain
- North and South Africa.

The Company is working to expand this network of production areas in Australia and overseas.

The current production situation in Australia is summarised below:

Exhibit 4: Phytonova in Australia



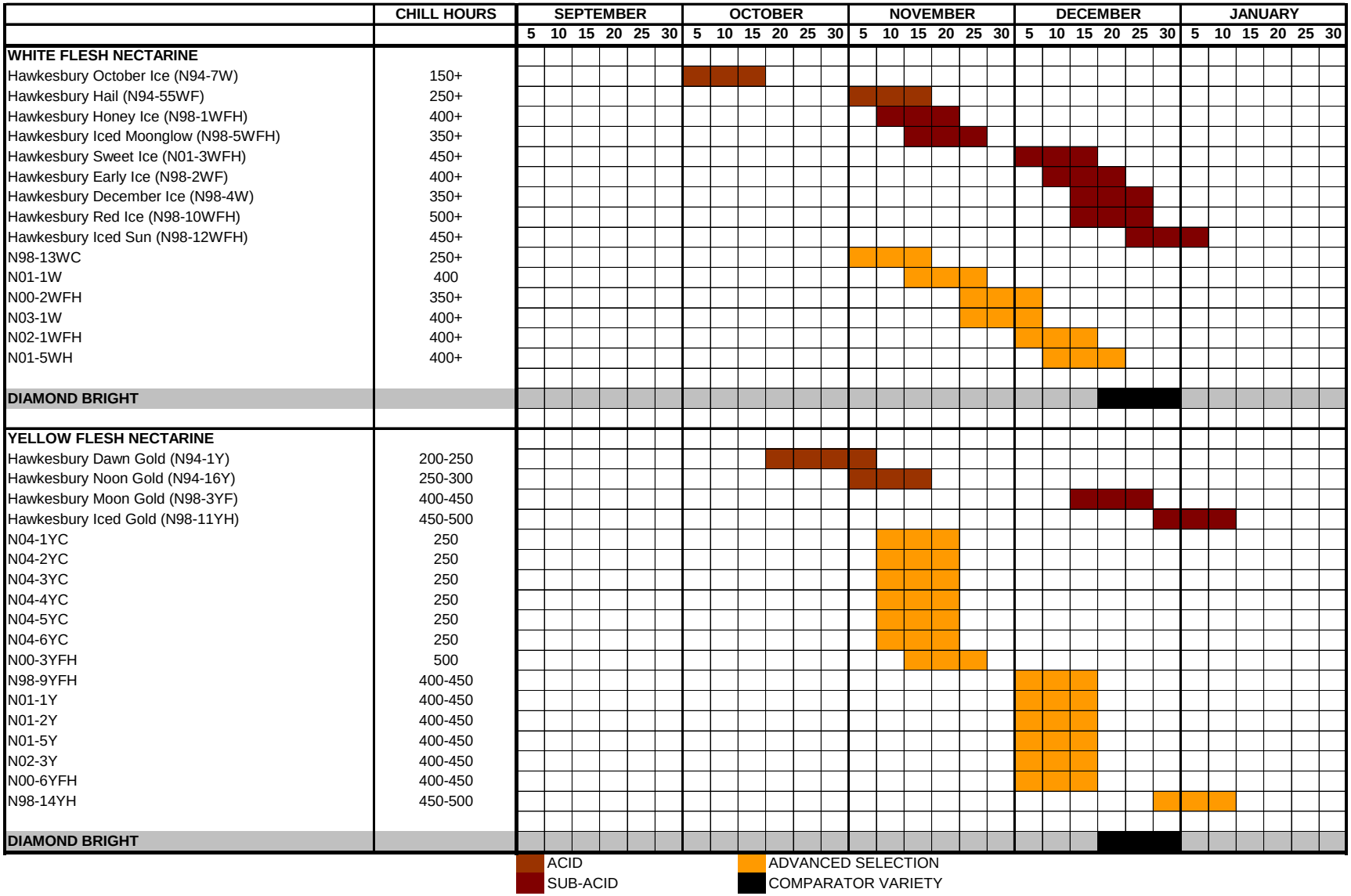
APPENDIX A

PHYTONOVA VARIETY MATURITY CHART

(at Sydney, Australia)

	CHILL HOURS	SEPTEMBER						OCTOBER						NOVEMBER						DECEMBER						JANUARY					
		5	10	15	20	25	30	5	10	15	20	25	30	5	10	15	20	25	30	5	10	15	20	25	30	5	10	15	20	25	30
BLOOD PLUM																															
Phytonova Mira Blood (PL 94-3B)	250																														
Hawkesbury Isabella Blood (PL 94-4 B)	250																														
Phytonova Delila Blood (PL 97-1 B)	400																														
Hawkesbury Rebecca Blood (PL 95-5B)	450																														
PL02-5B	350																														
PL02-6B	250																														
PL01-2B	300																														
PL03-3B	450																														
PL97-2B	300																														
BLACK AMBER																															
BLACK PLUM																															
Phytonova Mercury Onyx (PL 98-1)	300																														
Phytonova Jupiter Onyx (PL 98-2)	400																														
Phytonova Venus Onyx (PL 99-1)	400																														
Phytonova Neptune Onyx (PL 99-11)	350																														
PL04-1	250+																														
PL04-2	250+																														
PL04-3	250+																														
PL02-3	300+																														
PL04-4	400																														
BLACK AMBER																															

ACID
SUB-ACID
ADVANCED SELECTION
COMPARATOR VARIETY


CHILL HOURS
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
JANUARY
5 10 15 20 25 30
WHITE FLESH NECTARINE
Hawkesbury October Ice (N94-7W) 150+
Hawkesbury Hail (N94-55WF) 250+
Hawkesbury Honey Ice (N98-1WFH) 400+
Hawkesbury Iced Moonglow (N98-5WFH) 350+
Hawkesbury Sweet Ice (N01-3WFH) 450+
Hawkesbury Early Ice (N98-2WF) 400+
Hawkesbury December Ice (N98-4W) 350+
Hawkesbury Red Ice (N98-10WFH) 500+
Hawkesbury Iced Sun (N98-12WFH) 450+
N98-13WC 250+
N01-1W 400
N00-2WFH 350+
N03-1W 400+
N02-1WFH 400+
N01-5WH 400+
DIAMOND BRIGHT
YELLOW FLESH NECTARINE
Hawkesbury Dawn Gold (N94-1Y) 200-250
Hawkesbury Noon Gold (N94-16Y) 250-300
Hawkesbury Moon Gold (N98-3YF) 400-450
Hawkesbury Iced Gold (N98-11YH) 450-500
N04-1YC 250
N04-2YC 250
N04-3YC 250
N04-4YC 250
N04-5YC 250
N04-6YC 250
N00-3YFH 500
N98-9YFH 400-450
N01-1Y 400-450
N01-2Y 400-450
N01-5Y 400-450
N02-3Y 400-450
N00-6YFH 400-450
N98-14YH 450-500
DIAMOND BRIGHT
ACID
SUB-ACID
ADVANCED SELECTION
COMPARATOR VARIETY

phytonova™
Natural Plant Breeding Technology

	CHILL HOURS (approximate)	SEPTEMBER 5 10 15 20 25 30	OCTOBER 5 10 15 20 25 30	NOVEMBER 5 10 15 20 25 30	DECEMBER 5 10 15 20 25 30	JANUARY 5 10 15 20 25 30
WHITE FLESH PEACH						
P94-3W	250					
P94-9W	250					
P94-66W	250					
P94-65WF	300					
IVORY PRINCESS						
YELLOW FLESH PEACH						
Hawkesbury October Gold (P94-5Y)	200-250					
Hawkesbury Honey Gold (P97-1YH)	200-250					
P94-4Y	200-250					
P03-1Y (sub-acid)	200+					
P02-1YH	250+					
P 94-15Y	200-250					
P04-1Y (sub-acid)	250+					
P94-43Y	250+					
P04-9Y	250					
P04-5YC	250					
P04-4YC	250					
IVORY PRINCESS						

ACID
SUB-ACID
ADVANCED SELECTION
COMPARATOR VARIETY

	CHILL HOURS	SEPTEMBER						OCTOBER						NOVEMBER						DECEMBER						JANUARY					
	(approximate)	5	10	15	20	25	30	5	10	15	20	25	30	5	10	15	20	25	30	5	10	15	20	25	30	5	10	15	20	25	30
WHITE FLESH PEENTO																															
P98-7PW	300+																														
P98-2PW	450																														
P98-3PW	450																														
YELLOW FLESH PEENTO																															
P04-4PYC	250+																														
Gold Discus (P98-1PYF)	450																														
Oro Discus (P98-3PY)	450																														

ACID
SUB-ACID
ADVANCED SELECTION
COMPARATOR VARIETY

	CHILL HOURS	JANUARY						FEBRUARY						MARCH						APRIL						MAY					
		5	10	15	20	25	30	5	10	15	20	25	30	5	10	15	20	25	30	5	10	15	20	25	30	5	10	15	20	25	30
GREEN FLESH KIWIFRUIT																															
Jadeite (AC97-1F)	700																														
Jade (AC99-3F)	700																														
HAYWARD																															
YELLOW FLESH KIWIFRUIT																															
HAYWARD																															

ACID
SUB-ACID
COMPARATOR VARIETY