

### PAC Partners 2019 AgFood Round Table – Precision Farming Paul Thompson - Managing Director 6 February 2019















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The Select Harvests Limited financial statements are prepared in accordance with Australian Accounting Standards, other authoritative pronouncements of the Australian Accounting Standards Board, Urgent Issues Group Interpretations and the Corporations Act 2001. This includes application of AASB 141 Agriculture in accounting for the current year almond crop, which is classified as a biological asset. In applying this standard to determine the value of the current year crop, the Company makes various assumptions at the balance date as the selling price of the crop can only be estimated and the actual crop yield will not be known until it is completely processed and sold. The resulting accounting estimates will, by definition, seldom equal the related actual results, and have a risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year.



















**Select Harvests Overview** 

### **Precision Farming**

### **Business Update**

















### **Select Harvests**



#### Overview

- Listed on the ASX (SHV), with a Market Capitalisation of \$571m (29 January 2019) and 558 employees
- Assets in Victoria, New South Wales and South Australia

#### One of the largest almond growers globally

- 7,677 planted hectares of Australian almond orchards
- 36% of our orchards will reach maturity over the next 8 years, underpinning future growth
- State-of-the-art almond processing facility at Carina West, North West Victoria

#### Diversified 'better for you' branded plant food portfolio

- Market leading brands: Lucky, NuVitality, Sunsol, and Allinga Farms supplying wholesalers, manufacturers and retailers in both domestic and export markets.
- Value-added processing facility in the Northern Suburbs of Melbourne: snacking and cooking nuts, seeds, health mixes and muesli

#### Export focused business, with Asia the key target market

- Exclusive Trademark License & Distribution Agreement with PepsiCo Foods (China) Co. Ltd
- Separate to the PepsiCo agreement, secured distribution for our Sunsol brand in Sam's Club stores
- Our Industrial Division seeing strong demand from Asian food processors, esp. the baking industry

#### We supply the world with a growing volume of high quality, plant based food products















## **Select Harvests – in control of our destiny**

	To be a Leader in the Supply of Better for You Plant Based Foods								
	Trust & Respect	Integrity & Diversity		Sustainability		Performance		2	Innovation
Values	Treat all stakeholders with trust and respect	will not comprom	ll decisions and transactions will not compromise the ægrity of the organisation or individual		Our focus is on the long-term sustainability of our environment, business and community		Exceed expectations on a da basis		Constantly challenge ourselves to improve everything
Strategic Priorities The pathway to achieving our vision	Optimise the Alm Increase productivity and achie yields from our growing almo	<b>Grow our Brands</b> Grow our consumer and industrial brands, ali the increasing consumption of plant based			· · · ·		e acquisitions that align with our		
Operational	Customers	S	Supply Chain Optimise our end-to-end supply chain to achieve maximum value for the business as a whole		d supply chain Focus on a safe working environment, value for the well-being, company culture,		Capital		
Focus What we do everyday	Exceed our current customer expectations and grow our custo base, focused on the Asian marke	omer to achieve					g, company culture, stru levelopment and staff		get capital discipline, balance sheet ength, superior shareholder returns and long term growth
Goal	Sustainable Shareholder Value Creation								





Sunsol.













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## **Technology and Select Harvests**



Press CTRL right click on the link below to get the video to appear – then press play

https://vimeo.com/315326919

















# **Plant Monitoring**

- Invested in a technology that monitors daily plant stress by deploying a range of sensors onto trees in our orchards
  - Stress occurs when trees are unable to maintain sufficient water supply. Stressed trees produce less almonds.
  - The plant monitoring technology delivers a simple indicator so we can determine the most efficient and effective irrigation schedule and get operational confirmation once water is applied.
  - Much faster and effective than if we were to wait for visual cues of plant stress, like leaf wilt.
- Phytech is an Israeli Ag. Analytics Tech company that develops IOT solutions for plant health monitoring
  - Phytech's sensors, on selected trees, continuously measure changes in trunk diameter, that are translated into plant stress indicators
  - The sensors identify yield reducing stress and immediately alerts farmers on a mobile app and web platform.
- We have been trialling Phytech's system across 200 hectares on one of our farms since 2015/16
  - Based on the positive results from the trial, we rolled out Phytech's plant monitoring system across 3,500 hectares 60% of our mature trees in 2018.
  - We are now able to precisely monitor our trees for signs of stress on a real time basis.
  - Having more detailed data on our trees means we can optimize a whole range of inputs, like: water;
     labour; fertilizer; energy use and ultimately optimize our yield and reduce cost per kilogram.













# **Plant Monitoring**

How does it work? A trunk of an almond tree shrinks during the day as a response to lowering water levels.

The more it is stressed, the more it contracts, before replenishing again at night.

Phytech's algorithms utilize this shrink-swell mechanism as a tool to quantify water stress.





Harvest results from a 2016 kern county trial showing the relationship between number of stress days and crop yield

- SHV Video Testimonial: <u>https://vimeo.com/303210123</u>
- Phytech Website: <u>https://www.phytech.com/</u>
- Application of Phytech to Almonds: <u>https://www.phytech.com/almonds</u>



SELECT HARVESTS













# **Aerial Imaging**

- Using aerial imaging technology to get a better indication of overall crop health
  - Basic aerial imagery for agriculture is not new. Precision ag. tech that captures high-resolution aerial imagery at various wavelengths has now been developed, a significant advancement on previous imaging technology.
  - Images are algorithmically analysed by software, revealing orchard health in detail.

#### Ceres Imaging is an Oakland, California based data-as-a-service start up

- The company attaches special cameras to aircraft that focus on particular wavelengths to assess water stress, chlorophyll content, and biomass – all indicators of health in a crop. Within 24/48 hours farmers can access processed imagery on mobile phones and tablets.
- Analysed images reveal disease, parasites, and weeds; points out where irrigation and fertilizer is over or underutilized; and spots irregular distribution of plants.
- The technology can be used for orchard accounting, issue spotting and weekly irrigation and fertilizer management.
- Very useful at assessing distribution/variability of water and plant health across our orchards
  - Eight high resolution images are taken per year. Images capture all trees in the orchard.
  - Allows us to asses both medium and long term orchard trends as well as a snap shot in time.
  - Not an irrigation scheduling tool (like Phytech), rather a water and fertilizer (nutrition) management tool: analyses if we are applying water uniformly and managing system hygiene correctly.













# **Aerial Imaging**

Water stress measures transpiration (related to stem water potential)

**Canopy vigour** is an index of leafy biomass

**Chlorophyll content** is related to nutrition/nitrogen



Ceres Imaging Website: <a href="http://www.ceresimaging.net/">http://www.ceresimaging.net/</a>

Ceres Imaging Youtube page: https://www.youtube.com/channel/UC0R9dHMHuLptwv\_RgGOjzHg





Sunsol.









## **Automated Quality Control**

#### Invested in a fully automated quality control system to reduce QA costs and increase accuracy

- Wholesale almonds are purchased based on grade and quality. Until now, final product quality was
  determined by human inspectors.
- Our new automated QA system leverages machine learning and computer vision algorithms, to undertake
  a full 3D inspection of every almond in a sample. Provides a visual inspection system that duplicates how a
  person analyses products minus the human error.
- Qcify is a San Francisco, California based quality control solutions provider
  - Qcify is trying to establish a new quality control data standard by collecting, curating, and making use of quality data through an automated quality control management system.
  - 2017 was the first year Qcify machines were installed in California and Australia. Over time, as Qcify
    machines sample more product and are installed in more locations, the machine learning and computer
    vision algorithms, both within firms and across industry, will improve.
- Enables our almond QA Department to run more efficiently, with less human error and more data consistency
  - The upcoming harvest will be the first time we use our Qcify machine in a production environment.
  - In addition to reducing cost and increasing accuracy, Qcify has the ability to enhance our communication with customers. We can send customers Qcify data and images to review, vs. the previous practice of written reports and physical samples.













## **Automated Quality Control**



Qcify demonstration video: <u>https://www.youtube.com/watch?v=e-Kp9KcwhaQ&feature=youtu.be</u>

Qcify Website: http://www.qcify.com/











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Agenda



**Select Harvests Overview** 

### **Precision Farming**

**Business Update** 















## **Business Update**

#### Crop & Harvest Update

- This year's growing season has been very favourable. As anticipated there have been frost and heat events, our investment in frost fans and the Phytech water management systems has mitigated these events.
- Our orchard specific horticultural programs have led to excellent tree health across our orchard portfolio.
- Last year's frost effected orchards have rebounded strongly.
- Forecasted weather outlook for the harvest period is positive
- Harvest will commence this week, we expect to be in full harvest mode within two weeks
- It is too early to accurately forecast the exact crop size or quality
- Processing of the crop will commence in the week of 18<sup>th</sup> February.

#### Business Update

- Demand for plant-based products has continued to grow.
- The recent movement in water pricing has been significant. Our water procurement policies, further productivity cost savings and improved almond hull returns from selling into the stockfeed markets has offset some of the increased water cost.
- We have been active with our marketing focussed on the Asian market maintaining relationships with key markets like India and increasing
  penetration in the China market where Australian almond exports are up ten times.
- The demand for Australian almonds in China coupled with a softening exchange rate has resulted in improved almond prices.
- The Industrial Division continues to see strong demand in both domestic and export markets.
- The Consumer Division sales to China remain in line with our expectations, with the China market currently focused on the New Year sales peak
- Consumer domestic sales remain in line with expectations, with good demand across the year end holiday period.

#### Transition Period - Annual General Meeting

- To receive and consider the financial statements of the Company and its controlled entities for the three month Transition Period ended 30
   September 2018 and the related Directors' Report and Auditors' Report.
- To be held at 11:00am (Melbourne Time) on Friday 22 February 2019 at the National Australia Bank Building, 700 Bourke Street, Docklands, Victoria.













## Australian vs. US Almond Exports to China



California remains the dominant supplier to China, with Australian and US shipments up 5.8% YOY





Sunsol







# **Australian Almond Exports to China are Increasing**



#### Until recently Australia has under traded in China





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