

20 December 2019

## **Hemp Trial Farm Affected by Adverse Weather Event**

### **Large-Scale Farming Knowledge Gained and to be Applied in 2020**

CropLogic Limited (ASX: CLI) (**CropLogic** or **Company**), award-winning global agronomy, farm management and agtech company provides an update on the Trial Hemp Farm including ‘foundation’ methodologies learned; advice regarding an A\$20 million Strategic Share Placement Facility; and appointment of Mike Fraley as General Manager of LogicalCropping.

#### **Trial Hemp Farm Take Outs**

- **CBD % yield affected by unseasonably adverse weather event**
- **Methodologies for hemp farming at scale developed – see Appendix A**
- **Centralised Corporate Farming Option for hemp industry to be explored – see Appendix B**

#### **Foundation Methodologies learned to be included and explored in 2020**

- **2020 Season – Direct cropping target of between 500 acres and 1,500 acres**
- **Implementation of a contract farming model**
- **Implementation of a procurement model**
- **Consideration of adding further infrastructure**
  - **Cropping**
  - **Drying**
  - **Extraction capabilities**
- **LogicalCropping General Manager appointed**

#### **Forward funding negotiated to fund 2020 programs**

- **A Strategic Share Placement Facility negotiated with Atlas Capital Partners of London, UK**

#### **Hemp Trial Farm Results**

CropLogic advises that the Hemp Trial Farm operated by CropLogic’s wholly owned subsidiary LogicalCropping LLC was affected late season by an adverse weather event. Central Oregon and much of the Pacific North West was affected by weather events originating in North West Canada and the Gulf of Alaska<sup>1</sup>.

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<sup>1</sup> <https://nws.weather.gov/blog/nwsboise/2019/11/09/october-2019-coldest-on-record-in-some-places-across-se-oregon-and-sw-idaho/>

During October 2019 parts of the Pacific North West, including Idaho, South East Washington State and Oregon experienced temperatures significantly lower than historical average temperatures<sup>2</sup>. The overnight temperature dropped 16°C from historical averages from a seasonal 8°C to -8°C.

The adverse low temperatures occurred late in the harvest and the effects of these temperatures were not immediately apparent to the LogicalCropping technical team. CBD rates are not static and are challenging to predict. Pre-harvest testing, prior to the adverse weather event, confirmed that CBD rates were developing in line with expectations.

Post-harvest CBD testing was significantly lower than earlier pre-harvest tests and after extensive analysis and assessment, including third party testing, it was determined that this was a result of this unseasonably adverse weather event.

#### **Biomass and CBD rates affected by unseasonably adverse weather event**

**CBD rates:** On hemp plants CBD is primarily located in trichomes, which are tiny ‘hairs’ or appendages produced primarily on the outside of hemp flowers and then to a lesser extent also on the leaves and other parts of the hemp plant<sup>3</sup>. It is thought the adverse weather event either destroyed these trichomes or made them brittle and they have subsequently dropped off the plants and thereby significantly reducing CBD rates.

**Biomass:** One of the objectives of the Hemp Trial Farm was to develop methodologies for the cropping of hemp at scale. Several different genetic varieties and several different cropping methodologies were trialled. Accordingly, the final biomass poundage varied over the different trial plots. As would be commonly expected of a trial hemp farm of this nature, some of the methodologies were more productive than others. The adverse weather event also impacted on the quantity of biomass as it made the affected plants more brittle and also damaged overall plant health.

LogicalCropping’s observation is that weather patterns in Central Oregon can be quite localised and accordingly not all farming in Oregon or Central Oregon was affected by this adverse weather. However, many other farms in the region were affected by the adverse weather resulting in a ‘lower than usual’ CBD result.

Despite the effects of the adverse weather the biomass is thought to still be sellable. Sales avenues will be investigated in the new year.

#### **Final cropping results from the Hemp Trial Farm**

<b>Lbs</b>	<b>Average CBD%</b>	<b>Low CBD%</b>	<b>High CBD %</b>
407,296	2.11%	1.41%	3.33%

#### **Hemp Cropping Operations and Hemp Business Verticals into 2020**

LogicalCropping is well placed to take advantage of the emerging CBD hemp market through application and further development of the ‘foundation’ methodologies for cropping hemp at scale learnt this year (see Appendix A) and introducing various hemp business verticals to reduce exposure to a number of cropping risks (including adverse weather).

CropLogic proposes to explore a Centralised Corporate Farmer Option for buyers of CBD Hemp. This proposal is summarised in Appendix B.

<sup>2</sup> <https://www.accuweather.com/en/us/powell-butte/97753/october-weather/2187856>

<sup>3</sup> <https://weedmaps.com/learn/dictionary/trichome/>

## **Trimmed Flower**

The results of the trimmed flower project continue to be reviewed, a process that requires hand grading and assessment. This is largely due to the boutique and premium nature of these products. CropLogic will advise the market when this assessment is complete.

## **LogicalCropping General Manager Appointed – to drive future growth**

Mr. Mike Fraley has been appointed General Manager of LogicalCropping to facilitate the implementation of the 'foundation' methodology for growing hemp at scale and LogicalCropping's growth plans into 2020.

A native of Arizona, USA, Mike is an agronomist with over 25 years' experience with knowledge and experience working in the U.S. and European agricultural markets. Most recently Mike worked in developing markets for experimental and emerging agricultural products, including hemp and cannabis, and the marketing of agricultural seed fertilizer, commodities and proprietary products.

Reporting directly to the Chief Executive Officer and starting immediately Mike will relocate to Central Oregon in early 2020 and will be responsible for the day to day operations of LogicalCropping.

***"On behalf of LogicalCropping and the CropLogic Group I welcome Mike Fraley to the team", said James Cooper-Jones. "Mike's agronomy and product development expertise, coupled with his exposure to experimental crops including hemp and cannabis, will be of great value to LogicalCropping and its growth aspirations in the coming years."***

## **Status of Current Supply Agreement – Deschutes Labs**

The minimum required CBD % for the Deschutes Labs supply agreement is 8% CBD. Due to the impact of the adverse weather event the biomass from the Hemp Trial Farm will not meet this minimum requirement.

It had been agreed with Deschutes Labs to begin sending biomass material prior to LogicalCropping having completed its post-harvest testing. Pre-harvest testing gave confidence to the LogicalCropping team that the minimum 8% CBD content was going to be achieved. Post-harvest testing was below this threshold as a result of the adverse weather event. At this time shipments to Deschutes Labs have been suspended.

There is a provision under the supply agreement where third-party sourced material can be supplied to fulfill this contract. This will be explored with Deschutes Labs in the new year. Until these conversations are finalised the Board and management are not expecting any revenue from the supply agreement.

## **Financing for 2020 programs and future growth**

### **Short Term Funding**

CropLogic has entered into an unsecured short-term loan facility with sophisticated investors for an amount of \$250,000. The facility attracts no interest charges and matures on 31 January 2020. The Company must pay a one-off fee of \$12,500 for establishing the facility which is payable following the first draw down under the Atlas Capital Markets Strategic Share Placement Facility.

### **Atlas Capital Markets – Strategic Share Placement Facility**

Atlas Capital Markets, with its head office in London, UK, was a capital supporter of CropLogic for the 2019 season (ASX: 29<sup>th</sup> May 2019 and 9<sup>th</sup> August 2019). Atlas continues to be supportive of CropLogic's development plans for the future.

Atlas has agreed to a Strategic Share Placement Facility that could provide up to AUD 20 million of funding in the next 12-36 months, part of which can be facilitated out of existing capacity under ASX Listing Rule 7.1. The Company will seek

shareholder approval for any issue of shares proposed to be issued pursuant to the Strategic Share Placement that require shareholder approval.

For a summary of the Atlas Strategic Share Placement facility, please refer to Appendix C.

***“The Company has a significant potential commercial opportunity to provide a Corporate Farming Option to the hemp industry”, said Steven Wakefield, CropLogic Chair, “I thank the hardworking CropLogic and LogicalCropping team for their huge efforts this season, and for our supportive shareholders and funders around the world. I welcome Mike Fraley to the team and thank Atlas Capital Markets as our ongoing and look optimistically to the Group’s success into 2020 and beyond.”***

ASX release authorised by Board of CropLogic Limited.

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### **About CropLogic**

CropLogic is an award-winning global agricultural technology company listed on the Australian Securities Exchange (ASX). After launching its product into Washington State, USA in 2017, CropLogic is currently servicing a significant portion of horticultural growers in this region, with a market share as high as 30% in some crops. Following significant growth (2017-2018) in Washington State and Northern Oregon, in 2018, CropLogic expanded into the Idaho market. CropLogic offers growers of irrigated crops with digital agricultural technology expertise based upon scientific research and delivered with cutting edge technology – science, agronomy and technology interwoven into an expert system for decision support. For more information, please visit: <http://www.croplogic.com/>

**Comments on nature of Trial Farm:** The LogicalCropping Hemp Trial Farm is a trial farm and one of the stated aims is to trial farming and cropping methodologies that will assist with the cropping of hemp at scale. As such methodologies employed may differ or be adapted from time to time and from the ones outlined in this announcement.

An investment into CropLogic should be considered highly speculative and investors or potential investors should consider whether such an investment is appropriate to his/her particular needs, their individual risk profile for speculative investments, investment objectives and individual financial circumstances. CropLogic may also be exposed to the following risks as outlined below (which is not considered to be an exhaustive list of risks):

**Future capital requirements:** The Company may need to raise additional capital in the future. Any additional equity financing may be dilutive to Shareholders, as it may be undertaken at lower prices than the market price. Debt financing may or may not involve restrictive covenants which limit the Company's operations and business strategy.

No assurances can be made that appropriate capital or funding, if and when needed, will be available on terms favourable to the Company or at all. If the Company is unable to obtain additional financing as needed, it may be required to reduce, delay or suspend its operations and this could have a material adverse effect on the Company's activities and could affect the Company's ability to continue as a going concern or remain solvent.

**Sale of Hemp Biomass:** A subsidiary within the CropLogic Group is in the business of cropping industrial hemp. The hemp market is an emerging industry and sales infrastructure and markets are comparatively immature. There is no certainty of future profitable prices for hemp or certainty of a future hemp market at all. The impact of this is the Company may not be able to sell its hemp for profit or at all, which may manifest in lower than expected future revenues.

**Cropping Risk – General:** Cropping has some inherent risks that are beyond the ability of the Company to control. These include but are not limited to weather events, pest infestations and genetic failures. Cropping risk may result in total or partial crop failure, or a crop that is of lower grade. The Company is a provider of agronomy, farm management and agricultural technology products and services to growers predominately in the USA, Australia and New Zealand. As such the Company is exposed indirectly to cropping risk which may manifest in lower than expected future revenues as these clients may not be able to pay invoices when they fall due.

**Cropping Risk – Hemp:** A subsidiary within the CropLogic Group is in the business of cropping industrial hemp. Cropping has some inherent risks that are beyond the ability of the Company to control. These include but are not limited to weather events, pest infestations and genetic failures. Furthermore, Hemp is an emerging crop and as such agronomic and other scientific data is limited increasing exposure to cropping risk. Cropping risk may result in total or partial crop failure, or a crop that is of lower grade. As such the Company is exposed directly to cropping risk which may manifest in lower than expected future revenues.

**Pricing Risk – Hemp:** A subsidiary within the CropLogic Group is in the business of cropping industrial hemp. Hemp and CBD is a relatively new product and the Hemp and CBD industry should be considered an emerging market. As such there is no certainty of future profitable prices for hemp or certainty of a future hemp market at all. The impact of this is the Company may not be able to sell its hemp for profit or at all, which may manifest in lower than expected future revenues.

**Legislation Risk:** A subsidiary within the CropLogic Group is in the business of cropping industrial hemp and has obtained the appropriate government licences to do so. The CropLogic Group does not have any control over future legislative changes around the legal status of cropping industrial hemp, the compliance requirements contained in any such legislation and the ability to obtain a hemp cropping licence in the future. As such the Company is exposed directly to a legislation risk which may manifest in lower than expected future revenues.

## Appendix A

### 'Foundation' methodology for the cropping of hemp at scale

The objective of the LogicalCropping Hemp Trial Farm was to develop methodologies for the cropping of hemp at scale. This was set due to the emerging nature of the CBD industry and the lack of agronomic and sophisticated farm management research material, when compared to other more mature and less experimental crops.

Test results and findings from this year's crop suggest to the LogicalCropping technical team that a 'foundation' methodology from cropping hemp at scale has been developed.

### Key findings

1. **Irrigation method:** LogicalCropping tried several different irrigation methodologies at the Hemp Trial Farm this season. These included drip tape and mulch plastic, drip tape (without mulch plastic) and pivot irrigation. It was the experience from the Hemp Trial Farm this season that drip tape and mulch plastic worked most effectively.
2. **Field Type:** It was observed going into the season and with interviews with industry participants that hemp is grown in a variety of field types, including rocky / mountainous fields and fields with noticeable burrowing pest populations. However, it has been the experience from the Hemp Trial Farm from post-harvest results this season that Hemp performs best in fields that have minimal rocks and burrowing pests. This will inform field selection and reparation requirements for future years.
3. **Seeding method:** It was observed going into the season and with interviews with industry participants that several different seeding methodologies were common. As such several different methodologies were tested at the Hemp Trial Farm including, seedlings into drip tape and mulch plastic, seedlings into pivot, direct seeding into pivot and direct seeding into drip tape and mulch plastic. The sampling size of the direct seeding into drip tape and mulch plastic was not enough for there to be any definitive conclusions. Both the direct seeding and seedlings into pivot saw plants grow to maturity, however they were found to be less mature and of a smaller size than those under drip tape and mulch plastic and pivot plant spacings did present weeding challenges due to the absence of mulch plastic and the lack of chemical (herbicide) options. The most effective method was found to be with planting seedlings into drip tape and mulch plastic.
4. **Genetics:** Once again it was observed going into the season and with interviews with industry participants that several seed companies were seen by industry participants as superior. As such LogicalCropping sourced seeds from these companies. These seed varieties largely performed as expected however LogicalCropping intends to consider augmenting these genetics with other genetics for coming seasons.

It was noted that compared with other mature cropping industries the agronomic data that came with the seeds and then the in-season support from these seed companies was significantly less or non-existent. It is further noted that due to the rapid development of the immature and emerging hemp market, genetics are less static when compared with mature crops. As such it is thought important to continue to explore alternate genetics.

The core elements of the 'foundation' methodology for cropping hemp at scale are:

1. Irrigation: Drip Tape and Mulch Plastic
2. Field Type: Irrigated with minimal rocks and burrowing pests
3. Seeding Method: Seedlings ('sprouts' or 'starts')
4. Genetics: Many of this year's varieties are likely to be used next year, augmented with 'new' and/or 'emerging' genetics

Where this 'foundation' methodology was implemented this season the results were well within target production for the hemp trial farm, including yields in some instances in excess of 1lb per plant and third party test results showing CBD percentages ranging from 10 to 13% (prior to the adverse weather event).

This 'foundation' methodology will be developed over the North American winter break for implementation next season with LogicalCropping and CropLogic applying the findings from each season through the lens of its agronomy, farm management and hemp expertise to further add to and refine this methodology as would be expected with an emerging market such as CBD and an experimental / immature crop such as hemp.

## **Appendix B**

### **Centralised Corporate Farmer Option**

A Centralised Corporate Farmer Option is being explored and has the potential to include:

#### **1. Direct Cropping**

- a. cropping operations directly managed and operated by LogicalCropping
- b. applies the 'foundation' methodology developed in the 2019 season
- c. Target acres – between 500 and 1,500 acres
- d. Increase in acreage reduces exposure to localised cropping risk (including adverse weather)

#### **2. Contract Growers**

- a. cropping operations owned and operated by third party farmers with LogicalCropping / CropLogic taking on an advisory role
- b. LogicalCropping will then have the option to sell the biomass from these farms
- c. applies the 'foundation' methodology developed in the 2019 season
- d. allows application of CropLogic's skills developed over years of agronomic and farm management advisory in the Pacific North West
- e. Target acres – between 300 and 1,000 acres
- f. 4 or more regions within Oregon to be targeted
- g. Increase in acreage and geographical distribution of operations (4 or more regions) reduces exposure to localised cropping risk (including adverse weather)

#### **3. Procurement Model**

- a. LogicalCropping is permitted under its Oregon hemp licence to buy and sell hemp biomass
- b. applies LogicalCropping's perhaps unique agronomic and hemp expertise and warehousing / logistical capabilities
- c. supply agreements permit fulfilment from third party material
- d. Procurement strategy reduces exposure to cropping risk (including adverse weather)

LogicalCropping will also investigate extending this Centralised Corporate Farmer Option to include processing infrastructure such as hemp cropping and harvesting machinery, hemp processing equipment including drying facilities and also vertical integration of CBD extraction capabilities. With the investigation to include the feasibility of this machinery and facilities to be used by LogicalCropping in its own operations and also the wider hemp growing industry including any contract growers.

## Appendix C

Atlas – Strategic Share Placement	
<b>Term</b>	3 years
<b>Total Commitment</b>	A\$20,000,000
<b>Conditions</b>	<p>Atlas' obligations to subscribe for shares are subject to (amongst other things) the following being satisfied in respect of each subscription request:</p> <ul style="list-style-type: none"> <li>trading in the Company's shares not being suspended as of the relevant issue date;</li> <li>no material adverse effect or event of default occurring; and</li> <li>the Collateral Share Agreement being entered into and remaining in force at the relevant issue date.</li> </ul>
<b>Collateral Share Agreement</b>	The Company will lend such number of shares to Atlas which is no less than the number of shares specified in a subscription request ( <b>Collateral Shares</b> ). In the event that the number of Collateral Shares issued to Atlas is greater than a subsequent subscription request, Atlas may reduce the number of Collateral Shares outstanding until the Collateral Share balance is zero.
<b>Issue Price</b>	<p>The issue price will be 90% of the higher of:</p> <ul style="list-style-type: none"> <li>the average VWAP of shares during the Pricing Period; and</li> <li>the Minimum Acceptance Price.</li> </ul>
<b>Pricing Period</b>	The five consecutive trading days commencing with the trading day immediately following a subscription request.
<b>Number of Shares</b>	<p>Upon receipt of a subscription request by the Company to subscribe for Shares, Atlas (or the Subscriber) will agree to subscribe for all or part of the shares set out in the subscription request (not less than 50%).</p> <p>The Company cannot require Atlas to subscribe for such number of shares which is more than 800% of the average trading volume of the 10 trading days immediately preceding the subscription request.</p>
<b>Completion</b>	Atlas (or the subscriber) will pay the issue price for the subscription shares and the Company will issue the subscription shares to Atlas (or the subscriber) on the trading date immediately after the end of the Pricing Period.
<b>Commitment Fee</b>	The Company must pay to Atlas or the subscriber a commitment fee equal to 3% of the principal amount of the subscription request (payable in cash) on each issue date.
<b>Termination</b>	Atlas may terminate the agreement in the event that a material adverse effect or a material change in ownership has occurred in respect of the

	Company and the non-defaulting party may terminate the agreement if an event of default in respect of the defaulting party has occurred.
<b>Assignment</b>	Atlas may assign its rights and obligations under the agreement to an affiliate with the prior written consent of the Company.
<b>Events of Default</b>	The agreement contains customary events of default for an agreement of this nature.

**Trading Suspension and Atlas Convertible Notes:**

CropLogic has two funding facilities (Convertible Notes) with Atlas Capital Markets as announced on 29th May 2019 and 9th August 2019. Under both facilities a suspension of trading of more than 5 days is an event of default. A written waiver has been requested from Atlas however this has not been forthcoming. However, whilst reserving its rights Atlas has communicated to the company that it has no intention currently of exercising an event of default. The effects of an event of default if it was to remain unremedied is that Atlas has the ability to declare all amounts outstanding under both funding facilities immediately due and payable.