



Department of  
**Primary Industries and  
Regional Development**



**ROYALTIES  
FOR REGIONS**

## **Agribusiness Innovation Fund Project Report**

# Best Seed for Region



**Supporting your success**

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# Project Report

## 1. Name of Organisation

WA Hemp Growers' Co-op Ltd (HempGro)

## 2. Project Identification

Best Seed for Region – AIF – IHGS009

### Project Description

Hemp is a new industry in Western Australia which has the potential to produce a number of secondary industries from the hemp plant – most notably industrial grade building products, cosmetics, food and fibre. In the last ten years, hemp production in Canada has developed into a 50 million dollar food industry, both in export and internal markets. Meanwhile, Europe and the rest of the world are developing an expanding fibre and building industry around the hemp plant. The potential for plastic and carbon-based non-technology is being developed in China. At present it is estimated there are over 500 usable products which can be developed from the industrial hemp plant. This is without moving into the CBD or Medicinal cannabis area. For more information on the hemp plant refer to the Agrifutures discussion on Industrial Hemp.

Industry development relies on a dependable supply of hemp. At present, there is no known seed variety which grows consistently well in the various regions across WA. We aim, through this research project, to find specific hemp varieties which grow best in different regions and then start to develop those seeds to further meet WA industry and farmers' needs.

The trial had 5 farm sites from Capel to Esperance. WE partnered with DPIRD and our farmers to sow 15 varieties of IH aiming to find out which seed varieties would give us the best results.

After this, the industry should be able to develop the seed bulk to supply its own needs and it is hoped ongoing research will optimise these varieties to suit various WA conditions.

## 3. Funding Summary

The project came in under budget because there was no need to harvest by machine the trial plots. The seed was gathered by hand by the project officer. This has left a sum of \$14,902 in the Trial account. Funding spreadsheet attached.

## 4. Project Delivery

The Project was started as soon as seed was released from AQIS. It was difficult getting the seed from China through AQIS and Border Force and this was held up for a number of weeks. Eventually it was added to the first seeding of 4 out of 5 of the trial sites. The trial was still running until April 2020 but had been signed off as a research paper was presented in February at the Hemp Conference 2020 in Fremantle. All sites are just observing the final flowering of Chinese plants and their seed setting. All plants have since been ploughed into the ground as per instructions from DPIRD.

Paper presented at Fremantle conference is appended.

There was no harvesting and so there is an amount of money left which we would like to manage this year for some other on farm trials but understand this is not an accepted use of the money as the grant time has elapsed.

The lack of harvest was due mainly to the unseasonal hot weather. Some of the plots were hand harvested and germination and seed sizes were taken off the sites and recorded.

## **5. Project Achievements**

Even though it was a very hard season to grow IH dryland we believe the benefits to IH farmers in WA has lived up to the expectations of the trials. The report for farmers on our web page will show the unique variation in the different countries trialled seed. HempGro believe this will help farmers:

- More confident to grow this plant,
- More willing to invest more of their land to growing this plant
- Will see this as a long term intercrop in their rotation.
- Data accumulated and the WA agronomy information will be developed to help the industry grow.
- Off season crop at this point and allows more work in the farming industry.

It is hoped that this knowledge and confidence will help encourage more production industry to grow with the IH. This area is slowly growing but is still behind the outlying farmers who are keen to make this crop work.

## **6. Achievement of Royalties for Regions Principles**

### **Attaining sustainability**

It is hoped that the outcomes of this trial will encourage farmers to grow dryland IH. This is a very sustainable crop and all the downstream products it is able to produce maintain this sustainability, be it carbon capture, soil remediation, bioplastic and plastic composites or fibre.

### **Expanding opportunity**

The trials have shown that IH will grow dryland in many areas across the State and this hopefully will be taken up. Farmers growing IH need a processing industry to develop all the offtakes from IH. Due to the nature and biomass of IH these industry centres will need to be regional, close to IH farm hubs.

### **Growing prosperity**

This trial has shown that there are a number of different seeds which can be grown in WA dryland and they have various properties from short season growing, cold season growing to long extended season growing for biomass. HempGro believes that by finding the right variety to fit into a farming rotation, using information already gathered and future trials, farmers will be able to add a new crop to their rotation which will give them a different income stream. With this change in cropping and crop timing comes the expanded times for harvest, drying and agriproducts. All of which help to maintain our regional towns.

## 7. Local Content

We have been keeping our farmers informed of the outcomes of the Trials and will be sending out a final summary of findings. We also gathered for a field day at Manypeaks to encourage more farmers to grow hemp at which 59 people attended. There was another day at Mount Barker where 43 people attended.

The trial engaged with Wide Open Agriculture as one of their staff helped collect trial samples and reported to both farmer and HempGro. We also engaged Woorkoorlt Workwear and the Indigenous women who came and helped with soil preparation, seeding and measuring of plants. We work with Munro's Accountants to audit the accounts and liaised with all the DPIRD field stations and research personnel.

## 8. Aboriginal Participation

One of main sponsors was Woorkoorlt Workwear which is an Indigenous enterprise by South West Noongar Women. They came to our trial site at Capel and were encouraged to prepare the soil, were on site for the seeding and a discussion around hemp seeds, plants and assisted with measuring and overseeing the Capel site.

## 9. Risk and Issues Analysis

	Risk Name	Risk Description	Management Plan	Actual Event
1	Funding cut	That funding is not ongoing for the 3 years to gather enough data to make it worth while	Show good results, find other funding sources eg. seed companies and hemp production companies who could rely heavily on the results.	Funding was cut due to inability to match dollar for dollar. Seed companies were not interested in investing in trial. DPIRD managed seeding costs.
2	Data not collected as per RD	All Site managers are walked through the elected procedure to make sure they understand at which growing cycle they are to report findings	Possible if Site managers are very busy or not engaged in project. Probability is low as all site managers are trained research professionals. All data will have a date by which it should be collected and PM will be aiming to remind sites of timing on collection.	Reported findings were captured on Survey Monkey by farmers. DPIRD officers captured data at research stations.

3	Data collection lost	All data should be inputted to simple spreadsheet and shared to PM.	Possible if systems fail on site. This could easily be remediated by backing up work by emailing to another party. Protocol that all data is shared straight away and if not sent to PM then is requested.	Data was collected by farmers easily and however, not all data from research sites was shared to PM. Visited sites to collect own data.
4	Seeds do not germinate	Seed germination is too low to obtain a fair result	Germination tests should be carried out prior to planting. Extra seed will be ordered in case the germination rate is low – then a higher rate of planting may mediate this problem.	Seed Germination at DPIRD was high however, there appeared to be issues at sites. This issue is recorded for next trials.
5	Site trials not ready	Possible if trial site managers are not at R D establishment and do not have input in to site management.	Site managers need to be at initial discussions so they can begin to understand what is required of their site. This will allow them to put the trials in their growing rotation	PM informed 2 days prior to seeding occurred and so not all trial sites were prepared as well as hoped.
6	Seed	Seed does not arrive in time	As sowing seed is seasonal there is a high probability this can happen. Also because of the quarantine factors required for entry into WA Manage could be by engaging the seed stakeholders early so they have seeds available for early trial sites and then later trial site seed is sent later in the season	Seed arrived but was impounded by AQIS due to issues with seed cleaning and size of shipment not agreeing with documentation. Canadian seed was late due to paperwork issues at origin.

## Key Lessons Learned

1. Project planning needed to be established early and all roles assigned. This project tended to work on expectations of the people involved and therefore there was some miscommunications of roles. Prior to starting again HempGro would ensure there was a work place agreement on distribution of roles. Also, that outcomes of the project were clear so all working on the trial were aiming for the same idea. There needs to be working agreement with DPIRD to make sure that people are being used to their full capacity and it is recognised which roles belong to which people.
2. Implementation of the trials on farms were not explained to farmers and partners well and so not all trial sites were chosen well. Having said this, we believe the outcomes were sound. Although next time this should be discussed and reported on more fully early so everyone is looking for the same outcomes.
3. Procurement of seed was an issue and needs to be sorted out. The shipments were very slow to arrive and then in poor condition. Also, there were extra costs and time incurred due to seed not being clean. All seed imported in future **must** be ISTA tested prior to leaving country of origin.
4. There needed to be Australian seed in the trials however, all people asked would not sell to HempGro for the trials. I am not sure why as they are now eager to sell to us. Possibly not enough time in the hemp space for them to consider it worthwhile to be in the trials.

## 10. Knowledge Transfer

There has been a paper written by the three research people involved and was presented at the Hemp Conference in Fremantle by Shahajahan Miyan(DPIRD).

HempGro has also written a summary of findings for farmers and it is available on the web site for people to hopefully learn from the findings. It is being posted as lessons learnt for our farmers and other interested parties. It is being done in the form of summaries of data and farm talk from the Trials. Link to this page: <https://hempgro.com.au/blog/best-seed-for-region-germination-lfvct>

There was a field day held at the Riggall's Farm in Mount Barker and all the French seeds for the trial were on show to discuss. We had over 25 people attend and media interest. It was a good day for learning by all that attended.

## 11. Future Projects

HempGro will continue to trial for different varieties of seed to establish what is valuable to the WA regions. We found out a great deal about growing Industrial hemp in our climate and soils and will use this to inform our next trials.

As the industry processing facilities develop then the need for good information about seed growing conditions and expected outcomes from each variety are necessary. The benefit of farmers knowing what to expect from a variety and which seed to choose for a given outcome will save money and ensure a valuable harvest.

We have put in our first trial in 2020 in Moora (<https://hempgro.com.au/blog/moora-seed-trials-first-sowing-in-p3xe4>). We are using the 18 seeds which we imported in 2019 and trialling them over three sowing dates. The aim is to develop a northern growing region for hemp and we believe it will be earlier than the southern region and it will need to be dryland cropping. These trials in Moora are going to show us which of the seeds is robust enough to get up and growing and possibly show us a good window into which to grow the plant.

The cost of this trial is being borne by the Co-op and by the Gardiner's farm. We are sharing the in kind and the results and the passion for hemp.

The Woorkoorlt Workwear people are still very interested in hemp fibre and will be purchasing their own farm on the back of what was learnt by their participation in these trials. They are also in discussion with the Co-op about fibre processing and which seeds/plants will be best for their ideas.