

# MARA NEWSLETTER

## November Newsletter

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## Government Exits largely the Agricultural Research and moves towards “Farmer-Led” Research

A new government funded agency called RDAR was announced with set priorities to increase the competitiveness and profitability of Alberta’s agriculture industry.

### Results Driven Agriculture Research (RDAR)

This new government funded agency: RDAR has set priorities from productivity and sustainability to creating new value added products and getting research results into hands of farmers.

Priorities are,

- 1: Enhanced productivity, profitability and competitiveness**
- 2: Sustainable and responsible agricultural production**
- 3: Market demands: food safety, quality, value-added products and diversification**
- 4: Extension and knowledge transfer**

*“Investments in Agriculture are the best weapons against hunger and poverty, and they made life better for billions of people ...”*

*-BILL & Melinda Gates Foundation*

However, there will be questions remain about what type of projects to be approved, how the work will be funded and who will be doing it.

Going forward, Applied Research Associations are going to receive funding through this new agency.



Photo Caption: Earth Observing System

# Adding a New Crop Type to Your Rotation

Diversifying farming operations is a concept of regenerative agriculture. There is an increased interest in adding new crop types into rotations due to

- Different market opportunities reduce marketing risks such as price drops or reduced market demand
- Improved crop health.
  - Becoming more diverse is important to reduce risks of crop damages due to extreme weather conditions, insect and disease pressure as a result of tight crop rotations

Many crop diseases can survive in the soil from 6 to 20 years of time and rotating out of a host crop for few years can slow down the cycle of insect pests and crop diseases. Crop rotation without a host crop for at least two years, helps begin to reduce disease pressure in soil.

- Improved Soil Health
  - Different crops can also introduce different root systems (e.g. Deep vs shallow, N-Fixing vs No N Fixing) and above ground plant compositions (higher biomass and nutrient rich crop residues) to the soil.

Different plant biomasses help improve the soil health by building organic matter, conserving soil moisture and improving water infiltration through reduced soil compaction and erosion.

## Factors to be Considered When Selecting a Rotational Crop:

Following factors can be considered to determine what is best for your area:

1. What would best fit for the soil type
2. Climatic region your land is in
3. Amount of heat units and average precipitation in the area.
4. Consider whether effective weed and harvest management is possible in your area for the crop type.
  - e.g Crops like Quinoa tend to best grow in northern half of the prairie regions and too much heat in the south can cause failed flowering, some varieties of corn and soybean require more heat units and they do better in southern regions. Also need to consider end use market and marketability. Many specialty crops need a closed-loop contract. Growing new crops require significant planning, but considering major disease threats with current crops having, new crops in your rotation is important.

## Can Hemp Fit into your Rotation?

Growing industrial hemp requires licences, permits and authorizations but health Canada lightened it's regulations compared to before 2018. Producers no longer require a criminal record check and can collect leaves and fibre. Licence can apply online, free and valid for few years. Industrial Hemp Regulations (IHR) are described under Controlled Drugs and Substances Act (CDSA). Most hemp grown in western Canada are for human consumption, although there is a high potential to produce high quality fibre from industrial hemp. Having hemp decortication plants in Alberta where producers have easy access to sell their hemp stems, will promote the hemp fibre business within producers. Shorter varieties make residue management easy and there are varieties with a determinant growth which can be used by new to crop farmers. This specialty crop has a growing market demand, especially for organic hemp. Hemp provides ecosystem service also by fixing higher Carbon proportions in the air compared to other cash crops while producing more biomass and thereby, more organic matter.

## Tips to Consider if you are Planning to Add Hemp in your Rotation;

### Selecting the Right Field

Hemp prefers light soils with a good drainage and does not like wet feet and heavy clay soils. (After a rain if water sits there for couple of days, hemp will stop growing and weeds will take over). There are no registered in crop herbicides to control weeds. Suggest the growers to prepare fields before seeding, with a light harrowing or a pre-seed burn-off to take care of weeds and give a hemp a head start that it needs to get to a competitive stage.

Hemp grows well on oat stubble, anything legume based like alfalfa and soybeans (seed size is different enough to clean out and you also get a nitrogen credit) and Potato fields can be used and utilize nutrients that the potato crop didn't use. It is important to avoid fields with wild buckwheat issues and certain cereal fields (wheat) which can produce similar size seeds making hard to clean the seeds out of hemp seeds which will increase the cleanout cost.

If you are dealing with fields with wild buckwheat or volunteer wheat can choose hemp varieties with larger seeds (TKW range 13 to 21) and a taller variety can shade it out a little better too.

## **Choose a Good Variety**

There are 52 approved hemp cultivars in Canada and research can bring new cultivars with improved yield and growth in the market of cannabinoid and fibre in the future. Finola is the widest grown variety in prairies currently, due to the ability of predicting maturity and harvesting times. Finola takes set number of dates to flowers whereas some other varieties flowering is induced by shortening day lengths. This goes through the combine easier and can delay the date of seeding to control the height. Hence, for the first time growers, Finola is one of the best varieties to grow. In MARA research trials Finola produced a decent amount of grain yield in both organic and conventional sites. Finola can't handle wet feet.

If producers prefer little bit taller varieties with better yields, can select dual purpose; grain and fibre varieties (shorter compared to fibre varieties which grow 14 ft. taller).

## **Fertilize the Crop**

Hemp is highly mycorrhizal with a deeper root system and it can scavenge nutrients from the deeper layers of soil profile preventing nutrient leaching and improving soil structure. Hemp is a bigger plant and it requires more nutrients to maintain it compared to other crops. Hemp responds to manure, green manure and N well. Hemp grows well in organic fields after a green manure plow-down crop. It also help reducing the nutrients loss from the fields and mitigate leaching that can happen in the field. Very good candidate for manure.

## **Consider your Management System**

Hemp fits into any production system and can use it for lengthening your crop rotation.

Hemp is highly weed competitive and it can suppress weeds as long as it gets off to a good start. It won't be very competitive if it doesn't have a good start, weeds can take over the crop. Once hemp started to elongate it can grow 6 inches to 1 ft. within a week. Hemp is a good fit for producers who are using regenerative agriculture practices such as cover crops, intercropping, planned grazing and increased biodiversity with the focus on soil health building. Hemp can fit in to this system to increase the biodiversity.

Hemp sequesters lots of carbon and help to build organic matter in the soil. If you are not planning to bale off the straw, you can chop it and work it in to the soil. Hemp has an aggressive root system similar to canola. Depending on the space available it will spread out and be fibrous. Depending on soil health goal, hemp can be used in specific locations.

When the crop is breaking down, similar to forage radish it creates channels that improve soil tilth, thereby it creates improved water infiltration and create the path for roots of the other crops.

## **Storage Conditions**

The moisture level at harvesting can be about 16% and it can store well below 9% moisture. The ideal moisture level for long term storage is 8%. So you need to start drying seeds within 4 hrs after harvesting (maximum 7hrs) to protect seed quality. Supplemental heat or a grain dryer at low temperature is the best to dry it down. If you get hot spots, can create overheating and result would be rancidity. Growers don't swath hemp often, to avoid contamination with E-Coli or other harmful microbes in the soil. Hemp is a raw food product and tested for harmful microorganisms at the field level or when it enters the processing plants.

## **Assess Market Demand**

The food market demand for hemp seeds are growing and number of CBD (e.g. Cannabidiol oil) extractors from hemp chaff are increasing. With a decortication facility coming to Alberta, growers will have marketing options for hemp seed, chaff and straw

## **Do the Math**

On average, an experienced producers can produce 1000 lbs/acre, and conventional hemp seeds averages around 55 cents/lbs. Organic producer may get slightly lower yield but can sell the produce up to 3 times higher price compared to conventional.

## **Special Equipment/Equipment Modification**

Some producers prefer to have modifications in their harvesting equipment when they grow specialty crops like hemp. For seeding, canola seed setting is appropriate for hemp as well because hemp seeds are sensitive and can easily crack.

Finola can be harvested using any combine by delaying seeding to control the height.

When the crop is dry, fibres are stronger and harder to combine. Straight cut when the plant are still green, it will be easy to go through the combine. You may need newer or make sure they sharp to cut the hemp stems. Combines with more moving parts are not good for hemp because they can wrap. It's always good to carry pieces like fire extinguisher and a leaf blower or air compressor to blow chaff off exhaust manifolds and other areas of the combine where it might pile up.

Planning and assessing risks, pros and cons of having new crops in your crop rotation beforehand can save your time and money.

# The Orphan Well Association and Your Land

Do you have orphan oil and gas infrastructure on your land and are wondering what happens next? The Orphan Well Association (OWA) is responsible to decommission and reclaim the site. The OWA operates under the legal authority of the Alberta Energy Regulator (AER) and is a not-for-profit, industry-funded organization that works to decommission and reclaim the wells, facilities, and pipelines left behind by defunct oil and gas companies.

## How the OWA works

When a well, pipeline, facility or associated site no longer has a legally or financially responsible party that can be held accountable, it is known as an 'orphan.' At this point the orphan becomes the OWA's responsibility, and work will be undertaken to safely decommission the infrastructure and restore the land as close to its original state as possible. To complete this work, the OWA hires experienced contractors with excellent safety records. Throughout the process, the contractors strictly adhere to Alberta Energy Regulator (AER) and Alberta Environment and Parks (AEP) regulations and requirements.

## Is it an orphan?

When it comes to which sites are considered orphans, only those with no responsible party are formally designated as orphans by the AER. Until the AER designates the site as an orphan, the OWA cannot undertake work on the site. Within a month of a site being designated as an orphan, landowners will receive a letter from the OWA that will outline our process and seek your input on the site. A listing of all orphans in the Province can be found on our website (<http://www.orphanwell.ca/about/orphan-inventory/>). If you have not received a letter and cannot find the well listed on the OWA website, landowners are encouraged to contact the AER to determine who is responsible for the site. The AER may be contacted at 1 855 297 8311 or [LiabilityManagement@aer.ca](mailto:LiabilityManagement@aer.ca). Not all inactive sites are considered orphan under provincial regulations. Some sites may be operated or owned by a solvent company or may be under the custody of a court-appointed receiver to be sold. In other cases, the defunct operator may have working interest partners (WIPs), which are viable partners that hold some working interest in the well, pipeline or facility. These WIPs are then legally responsible for the decommissioning or reclamation work. New legislative changes may allow the OWA to work on these WIP sites, but only in cases where the OWA and the WIP have signed an agreement.

## What does this mean for you as a landowner?

After arranging access on your land, contractors will perform an inspection of the infrastructure. Once everything is deemed safe, and equipment is documented and photographed, the OWA will place signage at the site indicating the location is now under the care of the OWA. A company will then be assigned to safely plug the oil and gas wells, otherwise known as decommissioning (abandonment in regulatory terms). The wells are plugged, cemented, and the surface wellhead is cut below ground. Cutting below ground will allow landowners to safely cultivate over the former well. Crews will also remove any equipment in the area and then purge and decommission any accompanying pipelines. At this point, your land will be ready for remediation, if required, and reclamation. Once sites have been examined, crews will work to clean up any contamination that may be present (remediation). This may involve using a hoe or small drill rig to determine the extent of contamination. Any realized contamination is typically excavated and sent to an industrial landfill for disposal or treated on site. Clean backfill, if required, is sourced with landowner approval before being brought in. The reclamation process includes removing any leftover gravel on site, recontouring the site to original drainage patterns, replacing topsoil and returning the lease and access road to its previous state. Weeds are also controlled at this stage. Once work is complete, a reclamation certificate will be obtained from the AER, and the land can again be used as it once was.

## Access to your land

Due to the downturn in the economy in recent years, the OWA has accelerated work because of the need to reclaim thousands of upstream orphan oil and gas sites in Alberta. This may mean that the OWA will need to access your land throughout the year, regardless of what agricultural stage your land is in. The OWA appreciates your cooperation in allowing access for work crews. Wherever possible we will limit our footprint to the former lease and access road held by the defunct company. If off-lease work is required, the OWA will compensate landowners for any off-lease access. Of course, throughout the process, the OWA will be in constant communication with landowners, keeping you up to date about what is happening. The OWA is committed to developing positive relationships with landowners while minimizing impact to any agricultural practices.

What the OWA can and can't do While the OWA does not take place of the former operator, the regulations grant the OWA the legal right to access both public and private land to complete work on a well, facility or pipeline that has been deemed an orphan. Any surface lease remains in the name of the defunct operator. As such, the OWA is unable to compensate landowners/occupants for unpaid surface

Landowners may apply to the Alberta Surface Right Board (SRB) for the recovery of unpaid surface leases. For information respecting these payments, please contact the SRB (toll free at 310-000, then 780 427 2444) or visit their website at <https://surfacerights.alberta.ca/>.

The OWA enjoys a long history of working closely and cooperatively with landowners. In rare cases, some landowners have restricted access in an attempt to secure unpaid lease payments from the OWA. In these circumstances the OWA has an obligation to inform the SRB of the situation. Section 36(8) of the Surface Rights Act gives the SRB the discretion to not grant any payments if the landowner is refusing access for decommissioning and reclamation.

Landowners can obtain further information regarding the impact of restricting access through the Farmers Advocate Office at 310-FARM (3276) or visit <https://www.alberta.ca/farmers-advocateoffice.aspx>, or the Pembina Institute at <https://www.pembina.org/pub/landowners-primer-what-youneed-know-about-unreclaimed-oil-and-gas-wells>). Interested in learning more about the OWA? For additional information please visit [www.orphanwell.ca](http://www.orphanwell.ca) or contact the OWA at via email at [landowner@orphanwell.ca](mailto:landowner@orphanwell.ca).

Helpful Definitions:

## Orphan

When a well, pipeline, facility or associated site no longer has a legally or financially responsible party that can be held accountable. This requires formal designation by the AER.

## Inactive

A well or site is considered inactive when there has been no production for one year (six months in the case of a sour well). An inactive site may be due to economic or technical reasons.

Decommissioned (Abandoned) Sometimes referred to as abandonment or decommissioning, the well is permanently plugged and cut off below ground, pipelines are purged and cut-off, and any associated surface equipment removed.

## Remediation

The process of cleaning up any contamination left on site. Contaminants are managed and removed according to AER and AEP requirements. Contaminated soil may be hauled to a landfill and then replaced with clean soil, or may be treated onsite until it meets AEP guidelines.

## Reclamation

The process of returning the land to how it looked and was used before oil and gas development took place. This may involve recontouring the subsoil, replacing the topsoil, and re-establishing the vegetation.

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## References:

[www.rdar.ca](http://www.rdar.ca)

Grainnews Volume 46# 2: Putting Hemp in Your Rotation by Angela Lovell

Grainnews Volume 46 #5: Deciding to try a new to you crop

The Orphan well Association and your Land– Unedited full article as received

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