

FUNGAL DISEASE DETECTION PROGRAM

the fungal disease management tool
the most used in North America





Programme de détection préventive
des maladies fongiques agricoles
Fungal disease prevention
detection program

AIR: Agriculture. Investigation. Report.

Helps you protect your crops and allow you to reduce your operating costs **The best analysis support tool**

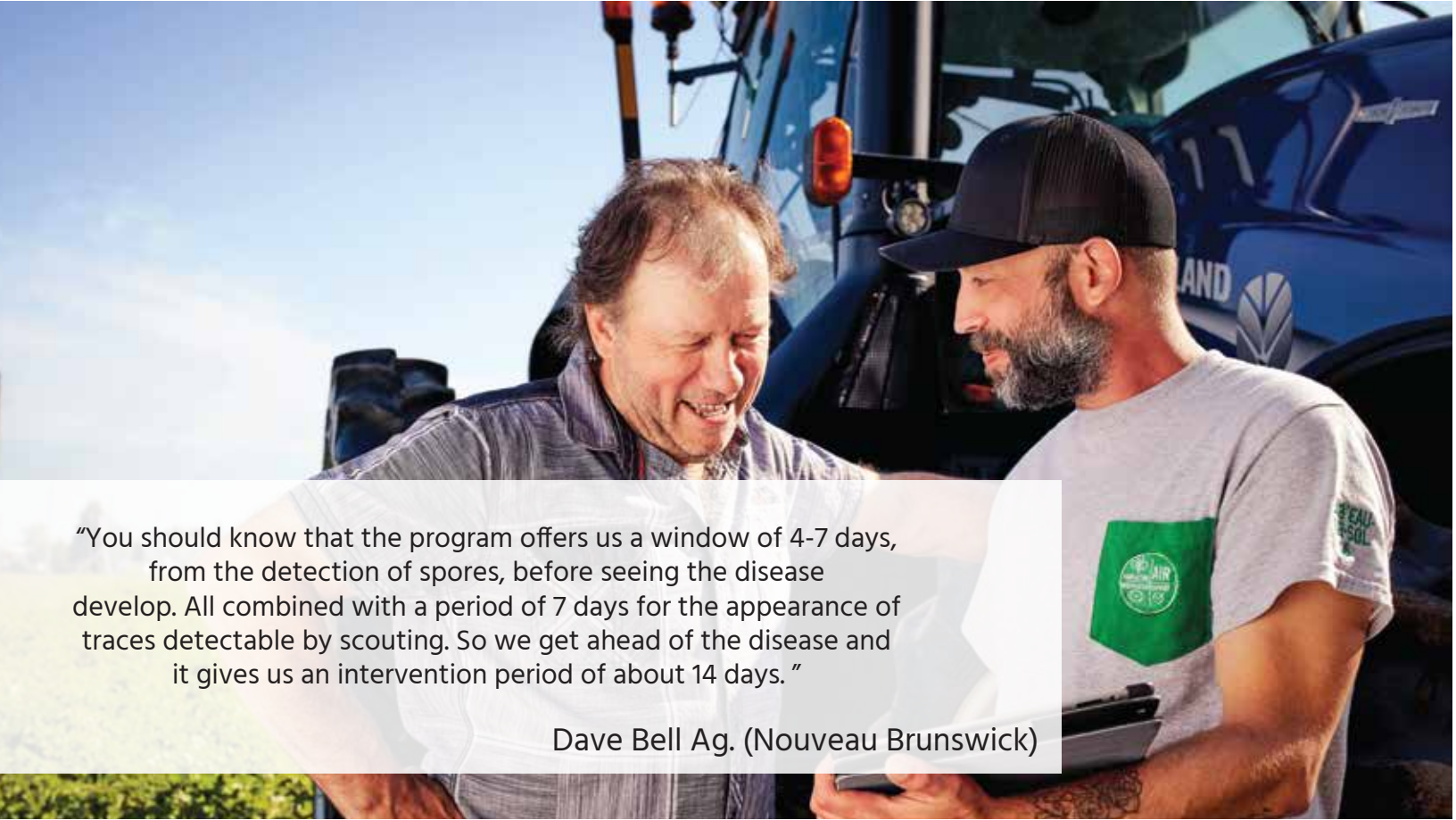
AIR's mission is to protect your crops and allow you to reduce your operating costs.

Managing your fungicides effectively has many benefits. Stop working blindly when it comes to fungal diseases! Get a measurement tool that will provide a factual and accurate report on your situation, providing you with scientific evidence that will serve to maximize your fungicide program.

This global portrait which will assist you in making the right decisions. The in-depth analysis of airborne pathogens in your crops comes to you in the form of a simple report which is accessible to you via your computer or smart phone. Less worrying and possibly less spraying!

AIR is a CND and US patented program (CND # 2 969 282) for preventive screening for fungal diseases in the fields. It serves as a decision-making aid for your interventions and also to better protect your crops in the context of sustainable agriculture.



A photograph of two men in an agricultural setting. The man on the left is older, with grey hair, wearing a blue button-down shirt. The man on the right is younger, with a beard, wearing a grey t-shirt with a green logo and a black baseball cap. They are both looking at a tablet held by the younger man. In the background, there is a blue tractor with the word 'AND' visible on its side.

“You should know that the program offers us a window of 4-7 days, from the detection of spores, before seeing the disease develop. All combined with a period of 7 days for the appearance of traces detectable by scouting. So we get ahead of the disease and it gives us an intervention period of about 14 days.”

Dave Bell Ag. (Nouveau Brunswick)

Our mandate

Our mandate is to provide scientific evidence on the capture of spores, used by different agricultural stakeholders (producers, potato boards, agronomists, companies, governments, platforms, etc.) to integrate this empirical information in a fungal disease management strategy. We operate this program composed of two tools (spore capture and weather risk indicator) which are original, and which could not be more relevant in 2020. The program is a supplier of raw data for analysis by producers, agronomists or algorithms, which correlates an increasingly important need, especially with the growth of global management tools / platforms offered to producers. It is the only viable alternative for future government regulations and constant pressure from end consumers. In this context, the program can and will be able to justify, scientifically, the necessary sprayings. We are not opposed to the use of fungicides, but to promote use as needed. We do not provide any recommendation or other indicator favoring intervention or non-intervention. We are independent and impartial. Our program has proven quick returns to investments as early as one season.

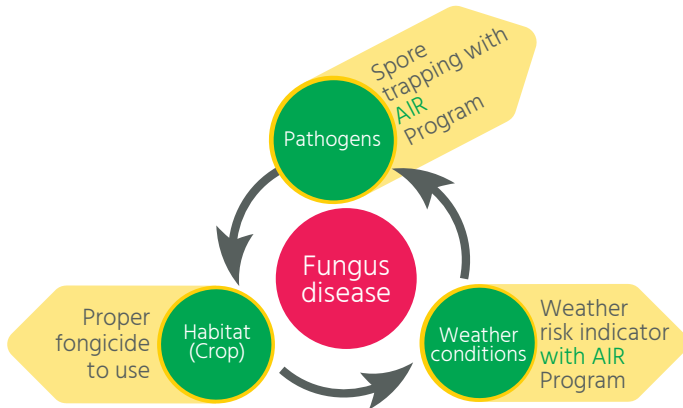
It should be noted that the capture of spores requires a greater deployment than programs based on classic weather models. We like to say that we offer a Premium program.

Thus, we have samplers which travels in fields at the rate of 3 times per week;

- Analysts' peoples who carry out the analysis of spores also 3 times week;
- A team which takes care of the installation and coordination of the weather stations;
- An IT department that will integrate the data into your logistic, platform, etc.;
- Multiple local laboratories;
- A customer service department;
- A training division;
- and much more;

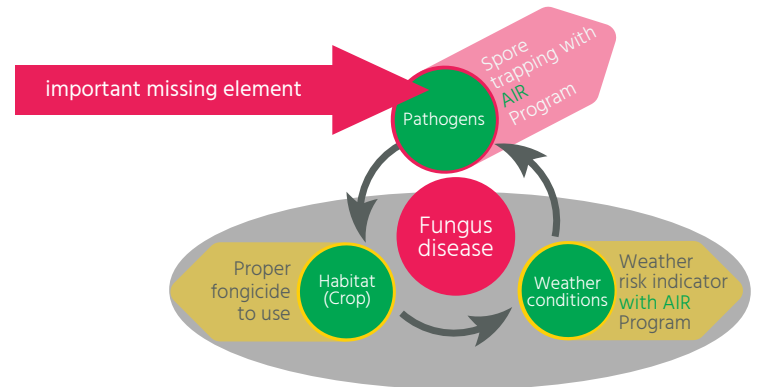
The pathogen, an essential element

The triangle of elements necessary for the development of the disease. The advantage of our program is to quantify the unknown, the pathogen, nonexistent in conventional weather models.



Classic weather model is limited

“However, it can participate in a global phytoprotection strategy such as your field history, your agronomic knowledge, etc.”



You should know that this unique and patented program finally manages fungal disease according to empirical data. Thus, it is possible to concentrate our efforts and budgets according to pressure observed and possibly reinvest certain sums for other purposes and products. The classic weather model (Miléos, UKKO, daycom) does not have this in-depth analysis, by only offering predictions based on weather data that do not take into account the presence/absence or not of pathogens (spores). It should be noted that the triangle of fungal disease has 3 elements to take into account for a complete analysis: plant, weather and pathogens.

The program operates in Quebec, New Brunswick, PEI, Maine, Florida and soon in Alberta, Manitoba and Colorado. We specialize in potato crops (and solanaceae family), but we also offer our services for onions and vines. We have been operating the program successfully, rigorously and precisely for 9 years. New crops will be added and we have many research and development projects including the soil analysis of Black Dot. We are also looking at the possibility of detecting insects, all in order to provide additional data for the analysis.

Several advantages relate to it such as:

- detection of 4 fungal diseases of interest (Late Blight, Early Blight, Fusarium, Botrytis);
- the installation of a weather station whose general data are accessible at all times;
- presence of local laboratories and local staff;
- analysis of spores present in fields (convincing scientific data);
- results in 24-48hrs (The same day in most cases);
- a risk indicator based on the literature of the diseases analyzed;
- patented in Canada and soon in the USA;
- microbiological technical support;
- agronomic support;
- much more.

Reduce
your operational costs



Benefits



The only viable alternative recognized by a Canadian and a US patent.

Offers you the opportunity to obtain grants covering up to 70% of costs. *

Provides scientific evidence aimed at making a needs analysis based on an empirical approach.

Installation of a weather station on your site / farm.

Can be combined with other weather model-based analysis tools classic like Miléos or others.

Essential for a comprehensive and effective approach to the fight against fungal diseases.

Responds to growing pressure from customers and governments for better use of pesticides. Take advantage of the Program to benefit from the impact on your image that AIR provides. A significant commercial impact. We are currently working on the design of a certification logo that will be possible to affix on your products.

Major savings on the purchase of fungicides (and other resources: equipment, fuel, employees) and thus have the possibility of allocating these sums to other farm operations. Ability to focus specifically on the pressure of other types of pests.

Concrete alternative for organic crops.

Impact on health and safety at work.

Agronomic support + microbiological support + educational tools.

* available depending on the territory and the collaboration of an advisory group or other agricultural group.
Québec - Grants via the Prime-Vert program via an agronomist or a consulting group

** According to our procedures currently in force for crop insurance (ASREC), it is stipulated that the experimental or observation plots are insurable when the crop in question is included in the Crop Insurance Program. Since the potato is one of them, agricultural companies that agree to participate in a research project are covered by insurance. This is the case for the Miléos project.

*** Contact Financière Agricole for more information.

24 / 48H report
on your smartphone



The program allows you to:

The extension and / or even the elimination of certain waterings.
To choose the right type of product to use (contact/systemic).
Confirm the correct irrigation timing.

AIR allows farmers and agronomists to target their pesticide spraying and to use our tool in decision-making regarding fungicides.

Spore capture is carried out in your fields and the analysis report, available in 24 to 48 hours directly on your smartphone, this easily let you know when your crop is at risk. An essential tool, knowing that we must act within 3-4 days for most fungal diseases. Finally, sleep on your two ears!

With our portable sampling device, there is no equipment left in your field. Our technician travels and takes care of everything. Our sampling technique is the fastest and most efficient, thus taking samples in the peak sporulation period of the pathogens involved. In this way, we precisely target the spores sought and our analysis reports are more relevant.

The capture of spores and the meteorological risk indicator (with the weather stations installed on each farm) allow **AIR** to be a complete detection tool, which proves its effectiveness in delivering rigorous and effective analyzes.



LAB'EAU-
AIR-SOL In collaboration with the
environmental analysis laboratory

100% independent

No link with fungicide manufacturers.





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- ✓ Traditional use of pesticides according to a predetermined schedule does not take into account the presence of disease or weather factors. Sometimes we can even detect diseases before conventional spraying calendar and prevent further problems.
- ✓ The application of pesticides according to the presence of weather risk and spore count, reduces unnecessary pesticide applications, in return reducing microorganisms' resistance, soil compaction, as well as damage caused in the fields.
- ✓ Our staff takes care of collecting samples, taking wind direction and air mass movements over the fields into account, which is crucial and must be taken into consideration for a global analysis.

Proliferation index

Sample(s)	Debris density	Molds and/or bacterias		Quantity (spores/m ³)			Risk	
		Identification of causal agent	Associated disease	Previous	Actual	Previous	Actual	
Field A	1	Phytophthora infestans	Late blight	NA	NA	4		
		Alternaria solani/alternata	Early blight	13	4	100		
		Fusarium spp.	stem rot	NA	NA	NA		
		Botrytis cinerea	Grey mould	NA	NA	NA		
Field B	2	Phytophthora infestans	Late blight	NA	NA	NA		
		Alternaria solani/alternata	Early blight	4	NA	NA		
		Fusarium spp.	stem rot	26	NA	NA		
		Botrytis cinerea	Grey mould	22	44	31		
Field C	2	Phytophthora infestans	Late blight	NA	NA	NA		
		Alternaria solani/alternata	Early blight	20	74	180		
		Fusarium spp.	stem rot	NA	4	4		
		Botrytis cinerea	Grey mould	44	92	74		
Field D	0	Phytophthora infestans	Late blight	NA	NA	NA		
		Alternaria solani/alternata	Early blight	12	4	18		
		Fusarium spp.	stem rot	NA	NA	NA		
		Botrytis cinerea	Grey mould	NA	NA	NA		

User-friendly **AIR** interface will allow you to make easier decisions throughout the season. At all times: you can see the evolution of pathogens in your fields and access the historical data directly on your computer or your smartphone.



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The personal weather station installed on each farm will provide personalized risk analysis by taking into account growth factors for each spore (temperature, relative humidity, rainfall, etc.) **Using the “Weather Underground” application, you have access to all your weather data any time, via your smart phone.**



Nowadays, rational pesticide use is increasing due to current environmental standards. The coming government regulation will make the program necessary, not only to help reduce spraying but also to justify if and when necessary. It fits with the principles of sustainable development and can save you money.

Rational use of pesticides is good for image, for end consumers, and for bright future. Make the right choice and join the **AIR** program now!

Our International Services

- ✓ Turnkey Service: A farmer who wants to get the complete AIR service without worry.
- ✓ Commercialization of licence: A company that uses AIR for promotion and commercial operations on a specific territory.
- ✓ Use of licence: A farm operator that uses AIR solely for his own farming operations in his own crop fields.

AIR

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environmental analysis laboratory



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**FOR A SUSTAINABLE
AGRICULTURE.**

AIR Program edition
MMXXI