

processes, once a certifier has given approval for an assignment to be conducted virtually. Visit www.ioia.net for the Town Hall link to participate if you are a verification officer and member of IOIA. The web site also offers Coping with Covid-19 Updates.

Contributions from some certifiers to the ACA-IOIA committees include identifying an initial set of operations and inspectors prepared for conducting remote inspections, identifying new considerations for remote audit reports, and additional items needing to be verified because of the remote context.

One committee is working with best practices for remote audits with farms having no internet or technology; these would include growers like the Amish and small-scale Grower Groups. In some cases, they are encouraging growers to enlist help from tech-savvy family or neighbours who might be able to assist with virtual inspection technology.

There has been discussion of working with drones to visually verify livestock and fields, but the learning curve for operation skill is extremely steep, and usually involves several crashes. Subcontracting with drone pilots in various geographic groupings might be a realistic option.

This crisis will continue to promote open communication between organic certifiers in both Canada and the United States which helps to prevent fraud. Ultimately, it may also lead to reducing the carbon footprint of organic verification!

Options for Financial Support

Increase or establish organic certification cost-share assistance for certified organic farms and handlers and provide immediate payment to organic operations. Consider making payments directly to organic certification agencies to cover their costs of certifying organic operations so that organic farmers and handlers do not have to bear that cost during these extreme times of market disruption.

Some certifiers are sending advance payments (a percentage based on previous inspection costs, excluding expenses) to contracted verification officers having lost income potential given delayed inspections. This helps to bridge the income gap and respects the value of verification officers –important human capital in the certification regime.

It has been suggested that a shared IOIA-ACA administrator could approach successful organic brands for grants for human capital investment, which could be very helpful in addressing the immediate income shortfalls. ACAs could also cover the

costs of webinar inspector training, platforms and networking services, including inspectors in subscriptions, and allowing for additional costs to be added to independent inspectors' fee schedules, which may have already been signed.

Certifiers have budgeted for conferences and activities that have been cancelled due to the pandemic. Those funds might now be re-allocated to offer advances or grants or loans to verification officers in need. Perhaps CBs could offer more remote paid mass balance training for example or contract risk assessment review work to appropriate inspectors. Partnering local inspectors with limited "on the ground" work, with more experienced inspectors who do the desk audits, is a hybrid approach being explored for higher risk new clients.

All in all, critical thinking and creative ideas are being shared in ongoing processes to continue with our common goals in guaranteeing organic integrity in all North American organic products!

Janine Gibson is an independent organic crop, livestock and process inspector with 30 years' experience promoting more resilient solutions to food production management. She is board liaison for the Canadian Committee of the IOIA.

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TwinN demonstration in organic potato



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gen TwinN is a great combination of naturally occurring nitrogen fixing microbes and some good science to allow them to be produced and delivered in a concentrated freeze-dried formulation.

TwinN microbes produce also plant growth factors (PGFs) that drive development of a strong secondary root structure. This means that the plants capture any applied nitrogen much more efficiently. This important secondary effect combines with TwinN's nitrogen fixation to improve the crop's

TwinN Nitrogen fixing microbes

Finding an effective, reliable and convenient source of nitrogen is a challenge for most organic growers. TwinN is a microbial inoculum product that is now available in Canada. TwinN contains selected species of natural nitrogen fixing microbes that colonise the roots and shoots of the crop after application. The microbe species in TwinN are the high-achievers of the nitrogen fixing microbe world, but they cannot be stored in powder or liquid format so TwinN microbes are freeze-dried in a vacuum sealed vial.

TwinN is produced entirely in Australia and every batch is tested by an Australian Government laboratory to ensure that the correct species are present in the guaranteed minimum numbers. The freeze-dried format allows us to provide over 10^{11} microbes per hectare and this very high count is important to getting consistent results from a microbial inoculum.

The primary reason organic growers use TwinN is for a nitrogen source. The Earth's atmosphere is 78% N_2 but plants can't access it. TwinN microbes fix atmospheric nitrogen into a plant available ammonium form. After application to the crop the microbes multiply and provide a steady stream of nitrogen right through the season. The fixed nitrogen is supplied either right on the root surface or within the plants shoots and leaves where the microbes live as endophytes. This means that almost all the fixed nitrogen is captured by the plant, unlike most externally supplied nitrogen sources that suffer losses to

nitrogen status. Additionally, improved capture of nitrogen means less leaching into waterways and aquifers. University trials showed a substantial reduction of leaching of nitrates from pots containing plants where TwinN was applied.

The microbes in TwinN establish a symbiotic relationship with the crop plants where the plants release substantial amounts of exudates from their roots which act to supply sugars and other nutrients for the TwinN microbes. The plants do this solely to feed the vitally important microflora around their roots. The stimulation of root structure and vigour by the TwinN microbes has the added benefit of helping establish large numbers of other beneficial microbes. A vigorous and varied microflora helps suppress diseases in the root zone and is important to increase the availability of most micronutrients.

TwinN is used in many countries in crops such as blueberries, berry crops, grapes, tree fruits, vegetables, potatoes and others. TwinN has a strong basis in science and is designed to use carefully selected naturally beneficial microbes to consistently grow high yields of high quality produce. For further information on TwinN contact Dewhops Enterprises, Ph. +509-961-2288, www.dewhops.com, dewhops2@gmail.com.

