

## Investment in Dry Bean Nitrogen and Phosphorus Research

CASSANDRA TKACHUK, RESEARCH PROJECT MANAGER, MANITOBA PULSE & SOYBEAN GROWERS



Photo credit: Laura Schmidt

Nodules observed on the roots of dry bean plants at the V5 stage.

**MANITOBA PULSE & SOYBEAN** Growers (MPSG) is currently invested in two applied dry bean nutrient projects involving nitrogen (N) and phosphorus (P) to update recommendations for Manitoba.

The first is led by Kristen P. MacMillan, University of Manitoba and MPSG Research Agronomist-in-Residence.

It's focused on quantifying biological N fixation (BNF) in modern bean varieties (of pinto, navy and black bean market classes) and comparing N management strategies with different combinations of fertilizer and inoculant. Testing sites are at Melita, Carman and Portage la Prairie from 2023–2025.

CONTINUED PAGE 2

## Regional Variety Testing – Dry Bean Expansion

Independent, unbiased, local results for Manitoba farmers

**JENNIFER MCCOMBE-THEROUX,** AGRONOMIST – REGIONAL VARIETY TRIALS, MANITOBA PULSE & SOYBEAN GROWERS

Each year, regional variety trials are conducted for soybean, dry bean, field pea, faba bean and lupin crops at locations across Manitoba. Dry beans are tested at both wide-row (>24 inches) and narrow-row (<12 inches) spacings to provide information for both production systems. In 2024, wide-row dry bean trials were at Morden, Carman, Winkler and Portage la Prairie, and narrow-row trials were at Morden, Portage la Prairie, Melita, Souris and Swan River.

In recent years the dry bean landscape has been changing with acres expanding westward and northward into areas that are new for this crop. With this change, two new narrow-row sites are being added in 2025 at Hamiota and Dauphin to provide data for these expanding growing areas.

A benefit of the regional variety testing program is just that – it's regional, providing access to local, practical information on annual yields, long-term yields and days to

CONTINUED PAGE 2

CONTINUED FROM PAGE 1 (INVESTMENT IN DRY BEAN NITROGEN AND PHOSPHORUS RESEARCH)

Can we improve the greenhouse gas footprint and profitability of dry beans by reducing N fertilizer use? The hypothesis is that dry beans are successfully acquiring N through BNF, reducing the need for N fertilizer. Previous research through this program revealed that nodules were present on dry bean roots even without the application of inoculant, and that fully fertilizing a dry bean crop may not be necessary to achieve maximum yield and economic return. This new research aims to answer how much N is actually coming from BNF to fine-tune production practices.

This project is solely funded by MPSG and part of a broader research program that is co-funded by MPSG and the U of M.

- ⇒ MPSG investment (2023–2025, excluding overall program cost): \$119,394
- ⇒ Sustainable Canadian Agricultural Partnership (SCAP) investment: \$179,091

The second study is led by Ramona Mohr, research scientist at Agriculture and Agri-Food Canada Brandon Research and Development Centre, focusing on both N and P management of solid seeded pinto and black beans in southwestern Manitoba. The focus is to determine the effects of N fertilizer rate with and without commercial inoculant and compare the impacts of different P fertilizer rates seed-placed vs. side-banded on

growth, yield, quality and profitability. White mould will also be assessed in response to N.

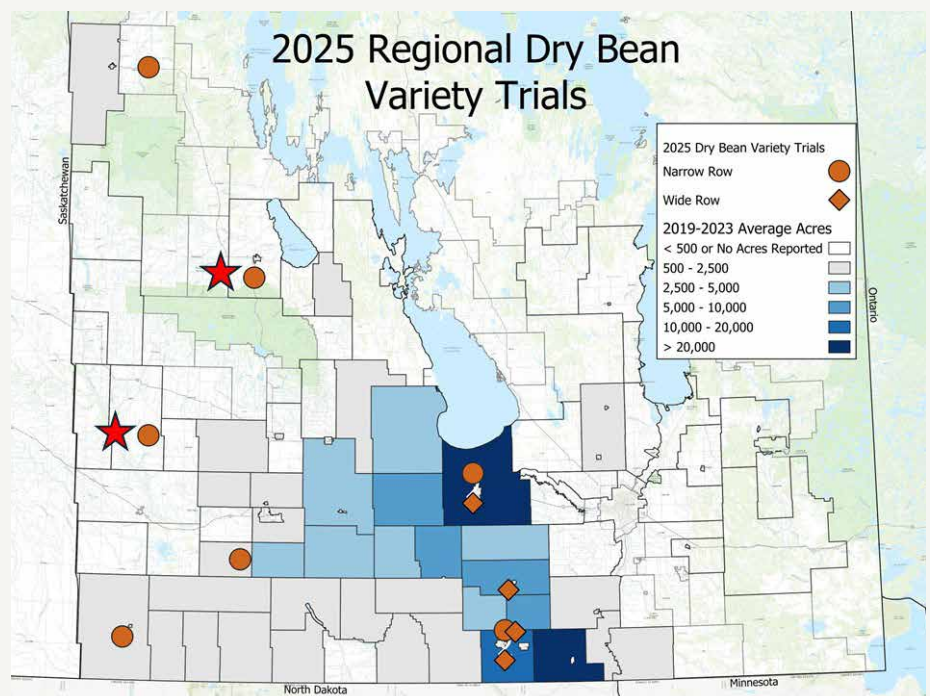
In response to the rise in dry bean acres across western Manitoba, this sister study has been underway to help fine-tune nutrient management practices under the relatively unique-to-Westman practice to solid-seed dry beans. This project is a continuation from previous (2021-2023), with the new phase running from 2024-2027 to encompass additional testing environments at Brandon and Carberry for more robust results. ■

- ⇒ MPSG investment (2024–2027): \$55,340
- ⇒ SCAP investment: \$108,010

CONTINUED FROM PAGE 1 (REGIONAL VARIETY TESTING – DRY BEAN EXPANSION)

maturity. Additional data is collected from the wide-row trials and is provided in the variety description tables, including thousand seed weight, lodging, pod height, common bacterial blight (CBB) severity, CBB incidence and white mould incidence. This provides long-term agronomic information to be able to compare varieties for the characteristics needed for your farm. ■

To view the full 2024 results visit [manitobapulse.ca](http://manitobapulse.ca)



2025 Regional Dry Bean Variety Trials.

# Dry Bean Disease Surveillance: An Annual Priority

LAURA SCHMIDT, FORMER PRODUCTION SPECIALIST, MANITOBA PULSE & SOYBEAN GROWERS

Disease surveillance helps inform research priorities, develops an understanding of the prevalence and severity of diseases of concern in our crops and provides an avenue to capture newly emerging disease issues across the province. Each year, roughly 40 dry bean fields are surveyed in Manitoba for root and foliar diseases, led by Agriculture and Agri-Food Canada (AAFC) researchers Ahmed Abdelmagid with AAFC Morden Research and Development Centre and Yong Min Kim with AAFC Brandon Research and Development Centre. Manitoba Pulse & Soybean Growers identifies this surveillance as a priority and has committed roughly \$48,000 over five years to this initiative through the 2023 Pulse Science Cluster.

Roots diseases in dry beans are assessed in mid- to late-July when plants are at early flowering to beginning pod stages. Crops are revisited in mid- to late-August when plants are starting to mature for foliar and stem diseases.

Over the last five years, Fusarium root rot has been found to infect ev-

ery dry bean crop surveyed (100 per cent of fields). However, severity of this disease has swung year-to-year with more severe infections observed in 2021 and 2024.

Common bacterial blight remains the most common foliar disease detected annually, with 82-100 per cent of crops exhibiting symptoms from 2020 to 2024. Anthracnose and rust haven't been observed in surveyed dry bean fields over the last five years.

White mould, a major disease of concern in dry beans, varies year-to-year with precipitation and weather conditions around crop flowering and early podding stages. In 2024, 30 per cent of fields surveyed had white mould infections with 2.3 per cent of leaf area infected, on average.

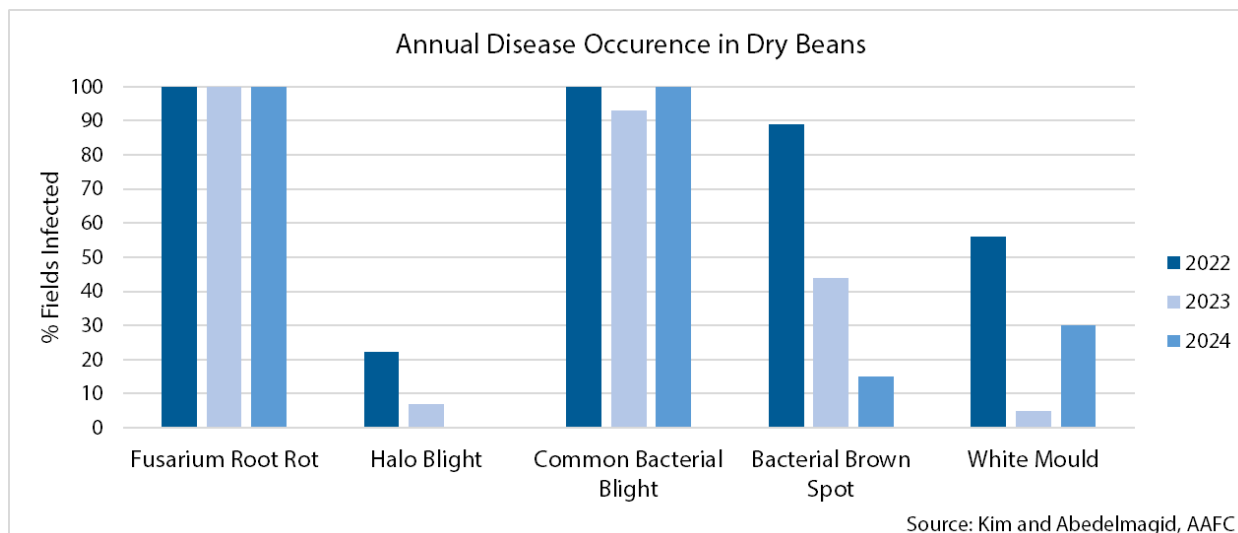
Plant-parasitic nematodes, like soybean cyst nematode (SCN), also fall under the disease surveillance umbrella. The last SCN survey was conducted in 2017 and found SCN occurring at very low levels in some fields in the Red River Valley. In 2025, another round of SCN soil testing and surveillance is scheduled to continue



Photo credit: Laura Schmidt

**White mould infection in pinto beans with fluffy white mycelial growth and dark black overwintering sclerotia bodies.**

to monitor for this destructive pest. Alongside this surveillance, research investigating crop and market class preferences of SCN is set to occur at the University of Manitoba with Mario Tenuta. Three varieties of pintos, navies and blacks are to be evaluated alongside yellow peas and faba beans, and compared to a susceptible soybean variety. Alongside surveillance of this pest, this research will provide valuable insight into producing profitable and sustainable dry bean crops in Manitoba.



**Annual disease occurrence in dry beans in Manitoba between 2022 to 2024.**

# Exploring the Global Journey of Manitoba Dry Beans

TANYA DER, DIRECTOR OF DIVERSIFICATION AND MARKET INSIGHTS, PULSE CANADA

**MANITOBA'S RICH AGRICULTURAL** landscape has long been a vital contributor to Canada's pulse crop industry, with dry beans playing a significant role. Locally grown Manitoba dry beans continue to make an impact on the international stage, as their versatility and quality is sought by importers and consumers from all around the world.

## MANITOBA DRY BEAN PRODUCTION

Canada seeded 402,300 acres of beans in 2024, with an annual production volume of approximately 400,000 tonnes (source: StatPub). While Canada grows a variety of dry beans, in Manitoba, the primary market classes are pinto, navy, and black beans, with smaller amounts of kidney, small red, and other market classes. Most of the beans produced in Canada are exported to consumers globally.

Over the past four years, Canadian bean exports have been valued at approximately \$500 million annually, with total export volumes ranging between 320,000 to 400,000 tonnes. The top export markets for Canadian beans are the United States (black, pinto, kidney), the United Kingdom (navy, black, pinto, kidney), Japan (adzuki, navy), Italy, and Mexico (navy, kidney, pinto, black, Great Northern).

## CULINARY USES AROUND THE GLOBE

The versatility of Manitoba dry beans is celebrated by international customers who incorporate them into a wide range of dishes. Here are some popular uses based on export market:

⇒ **UNITED STATES:** In the U.S., Manitoba dry beans are commonly used in traditional dishes such as baked beans, chili, and soups. Mexican and southwestern cuisines, in particular, drive a lot of bean demand, with pinto or black beans used in refried beans, burritos, tacos, and enchiladas. Bean dips, salads, grain bowls, pasta, and snacks are also gaining popularity, with companies launching new innovations like Ithaca hummus made with black beans and Stonemill Kitchen Tuscan-Style Pasta Salad with Great Northern beans. Innovations in ready-to-eat meals in pouches, such as Ben's Original Smoky Southwest Style 10 Medley are also growing in popularity.

⇒ **UNITED KINGDOM:** British consumers enjoy Manitoba dry beans in hearty stews, casseroles, soups, salads, and vegan-friendly meals. Hybrid plant- and animal-based products are also common, such as Morrison's chilli con carne pie with minced beef and kidney beans. Ready-to-eat meals are a leading category in the UK market and include innovations like Tesco's Root & Soul Chipotle Mixed Bean Plant Pot formulated with cannellini and black beans.

⇒ **JAPAN:** In Japan, dry beans are used in both sweet and savoury dishes. Adzuki beans are popular in traditional sweets like red bean paste, while savoury applications include miso soup and simmered dishes. Sweet bakery items including cream cakes and confectionery like red bean candy from Mikakuto are notable, along with savory dishes like Ajinomoto's onion gratin soup using

Kidney beans and chickpeas.

⇒ **ITALY:** Cranberry and kidney beans are top choices in traditional and innovative products, such as soups and salads. Mareblu's tuna salad bowl with kidney beans is a unique example, with a high percentage of pulses in the formulation.

⇒ **MEXICO:** In Mexico, black and pinto beans are staples in traditional dishes like refried beans, burritos, and tacos.

## MORE THAN FLAVOURFUL

In addition to their culinary versatility, Manitoba dry beans are celebrated for their nutritional profile. Rich in protein, fiber, vitamins, and minerals, they offer numerous health benefits, including improved digestion and heart health. Additionally, as a pulse crop, dry beans contribute to sustainable agriculture by improving soil health and reducing greenhouse gas emissions.

Dry beans are more than just a crop; they're a bridge connecting local farmers to global consumers. Their journey from the fertile fields of Manitoba to kitchens around the world underscores their value and versatility. As international demand continues to grow, Manitoba's dry beans will remain a valued ingredient, enriching diets and promoting sustainable practices worldwide.

So, whether you're in Morris, Milan, Manchester, or Mexico City, there's a good chance that a Manitoba dry bean grower had a hand in your meal.

# The Brilliance of Beans

‘Beans is How’ is a campaign that’s on a mission to double global bean consumption by 2028

**WHY? QUITE SIMPLY, BEANS CAN** help us fix the future.

⇒ **GLOBAL CHALLENGES:**

Beans are a simple, affordable solution to our global health, climate and cost of living challenges.

⇒ **PEOPLE:**

Pulses – including beans, lentils, chickpeas – are good for people’s health.

⇒ **PLANET:**

Beans and other pulses are known for providing numerous environmental benefits, ranging from improving soil health to reducing greenhouse gas emissions.

⇒ **PROSPERITY:**

Beans play a critical role in improved nutrition in populations around the world, and their versatility creates numerous market opportunities.

Despite their many benefits, global bean consumption is low and ‘Beans is How’ is working to get more **#beansonthemenu!**



## GETTING STARTED:

- Add cooked beans, chickpeas, lentils and other pulses on top of salads, into soups or in casseroles. You can also puree them to make dips, or add a creamy texture.
- Make beans the star of the plate! Bean-based products on the market are increasing. Try using pulse-based pastas and flours such as lentil pasta or chickpea flour.
- Dry beans cooked in the home and canned beans provide similar nutrition and health benefits. There are many options!
- Support local eateries that have **#beansonthemenu** and share about the incredible benefits of beans.

## COOKING YOUR OWN BEANS:

- Don’t shy away from adding spices, herbs, onions, and other seasonings according to your personal preferences and recommended diet plans.
- There are a variety of ways to cook dry beans that can fit within different lifestyles, such as using pressure cookers – which can drastically speed up cooking times – a slow cooker, or stovetop.
- To reduce dry bean cooking time, use fresher beans, soak overnight, add salt to the soaking or cooking water and wait to add acidic ingredients until the beans are cooked through. Canned beans are a great option if preparation time is limited.
- Freeze extra cooked beans to have them ready to use anytime.

2025

MANITOBA Pulse Soybean GROWERS

# Annual General Meeting

**FEBRUARY 12, 2025 | 8:00 A.M.**

Victoria Inn Hotel & Convention Centre 1808 Wellington Ave. Winnipeg, MB.

NOTICE IS HEREBY GIVEN that an in-person meeting of the Manitoba Pulse & Soybean Growers (MPSG) will be held during the 2025 CropConnect Conference.

3 Director positions are open for election.

Nominations to fill three seats on MPSG's Board of Directors will open on December 23, 2024 and close on January 23, 2025.

MPSG Nominating Committee  
Alex Burgess | Robbie Misko

The 2025 Board of Directors Nomination Package is available at [manitobapulse.ca](http://manitobapulse.ca) or by contacting [robyn@manitobapulse.ca](mailto:robyn@manitobapulse.ca) 204-751-0206

# DRY BEAN Bulletin

The Dry Bean Bulletin will be available twice annually, but MPSG agronomists are always just a phone call or an email away to answer any questions you might have.

Jennifer McCombe-Theroux  
Agronomist – Regional Variety Trials  
204-751-0737  
[jennifer@manitobapulse.ca](mailto:jennifer@manitobapulse.ca)

MANITOBA Pulse Soybean GROWERS

Check out our dry bean specific production resources at [manitobapulse.ca](http://manitobapulse.ca)



**Dry Bean Narrow-Row Production Guidelines**

**Dry Bean Desiccation and Harvest Guide**

**Dry Bean Insect and Disease Scouting Calendar**

**DRY BEAN GROWTH STAGING GUIDE**

MANITOBA Pulse Soybean GROWERS