Pulse and Soybean Regional Variety Testing

For nearly 30 years, pulse and soybean varieties have been evaluated across Manitoba to provide independent variety performance information to farmers. The success of this program is a product of the long-standing team effort across groups and provinces.

MANITOBA PULSE & SOYBEAN GROWERS

(MPSG) has been involved in variety testing of pulse and soybean crops for nearly 30 years. Each year, the independent evaluation of soybean, dry bean, field pea, faba bean and lentil varieties is carried out at several locations across Manitoba.

The goal of this program is to provide farmers with independent information on variety performance and agronomic characteristics to make informed variety selection decisions.

Soybean and dry bean trials are currently sponsored, administered and conducted by MPSG. Field pea, faba bean and lentil trials are coordinated with the Saskatchewan Regional Variety Testing Program, conducted by the Manitoba Crop Variety Evaluation Team (MCVET) and co-sponsored by MPSG, MCVET and Manitoba Agriculture and Resource Development (MARD).

Each year, seed companies submit varieties for evaluation and independent contractors carry out the small plot trials, including everything from planting to harvest. All trials have three replicates and randomization of varieties to enable

 statistical analysis. Varieties are also compared to a check variety for each crop type or region to account for differences in conditions across sites and years. To ensure high-quality data, rigorous analysis and review is carried out by MCVET and MPSG. Plots or trial locations that do not meet specific standards are rejected.

Interestingly, some varieties have remained constant over the years, showcasing the longevity of this program. As of 2020, the conventional soybean variety, OAC Prudence, clocked in at 136 site-years tested, the pea variety, CDC Meadow, reached 85 site-years and the pinto bean variety, Windbreaker, reached 56 site-years.

Standard measurements for all trials include yield and days to maturity. Measurements of other agronomic characteristics differ by site and by crop. For example, iron deficiency chlorosis (IDC) ratings are conducted at a location near Winnipeg that is prone to IDC to enhance symptoms of the condition and reveal the tolerance expressed by each soybean variety. Common bacterial blight and white mould ratings in dry bean trials are another example to determine the tolerance of bean varieties to these two important diseases.

Where to find this wonderful compilation of information? In the MPSG *Pulse and Soybean Variety Guide*, which is mailed to our farmer membership each year, in *Seed Manitoba* or online at manitobapulse.ca and seedmb.ca.

This variety testing program offers more than what you see in the guides. With the growing

Photo by Kevin Baron, Solum Valley Biosciences Inc.

importance of protein as a quality indicator, you can find crude protein levels for soybean and field pea varieties at the aforementioned websites.

This program has also become a gateway for additional Manitoba-based research. Soybean protein measurements are now part of a more extensive study looking at critical amino acid values of varieties grown in Manitoba, along with their feeding value for poultry and swine. Another project has utilized high-resolution imaging to assess physical (phenotypic) differences among varieties and predict critical growth stages for soybeans in Manitoba. And a brand-new project will be looking at phenotyping and high-throughput techniques (that make large-scale repetition feasible) to closely monitor and report genetic differences in crop growth and development.

It is clear that the success of these trials is a product of the long-standing team effort across groups and provinces. The regional variety testing program is set to continue for pulses and soybeans, with the assistance of MARD, AAFC, diversification centres (WADO, PCDF, PESAI, CMCDC) and the private research companies that play an integral role.

PRINCIPAL INVESTIGATORSManitoba Pulse & Soybean Growers(soybeans, dry beans), Manitoba Crop Variety Evaluation Team(peas, faba beans, lentils)MPSG 2020 INVESTMENT\$138,420(soybeans), \$41,390 (dry beans), \$7,000 (peas, faba beans, lentils)

CO-FUNDERS Manitoba Crop Variety Evaluation Team, Manitoba Agriculture and Resource Development

DURATION 28 years - ongoing