



AGRITECH CHALLENGE

Precision Agriculture and Bioproducts



INTRODUCTION: Precision Agriculture in B.C.

Precision agriculture technologies have the potential to address some of the major challenges faced by the agricultural industry in B.C., including nutrient loading in areas where there are high concentrations of livestock, poultry and eggs, grain crops, and horticultural production



INTRODUCTION: Precision Agriculture in B.C.

Precision agriculture technologies can simplify and optimize the nutrient management planning and application process for farmers

The selection of specific precision agriculture technologies for on-farm varies – there are technologies best suited for certain:

Farm Sizes



Crop Types



Landscapes

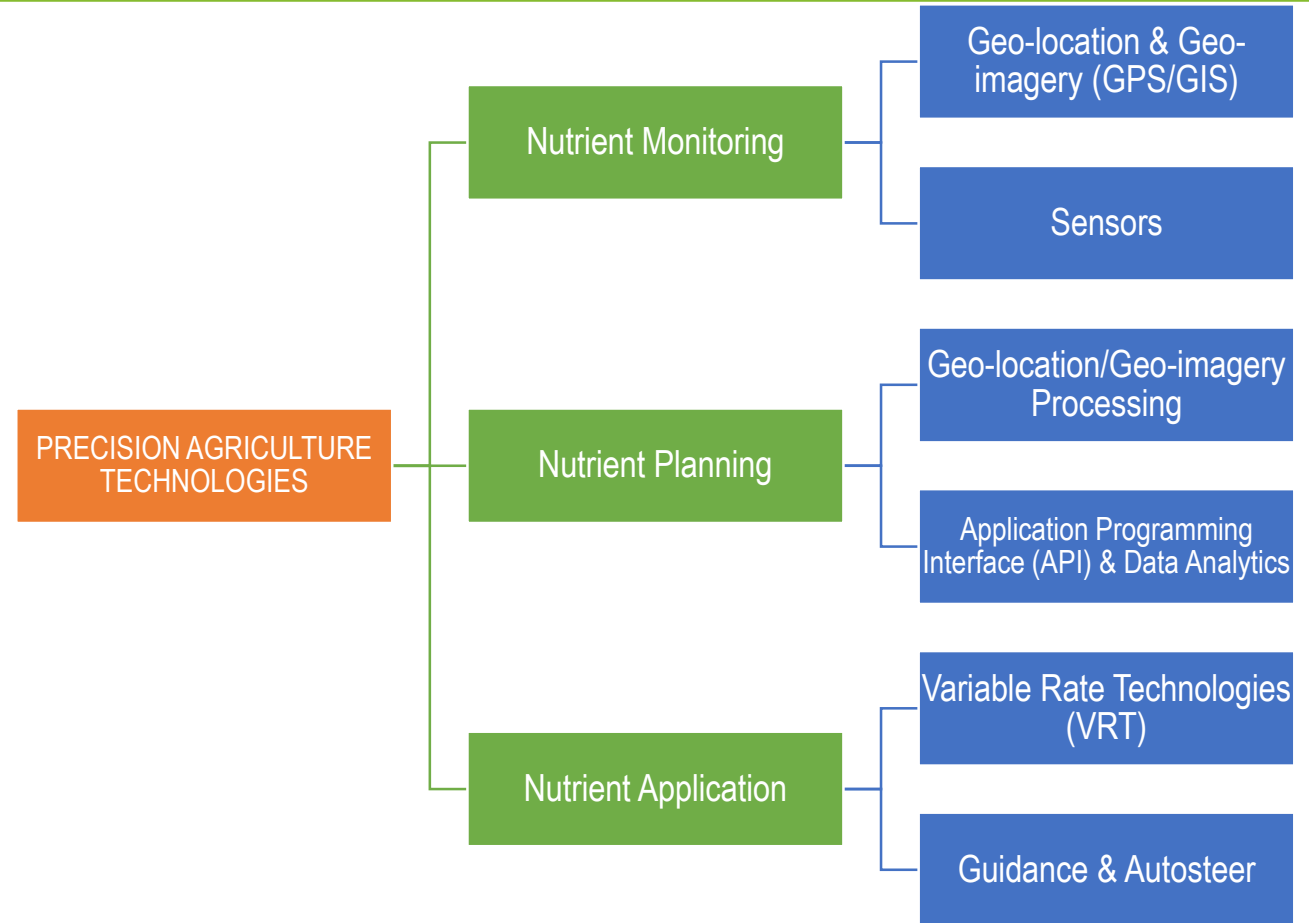


Weather



INTRODUCTION: Precision Agriculture Technologies

6 primary precision agriculture technology groupings inline with *nutrient management applications*

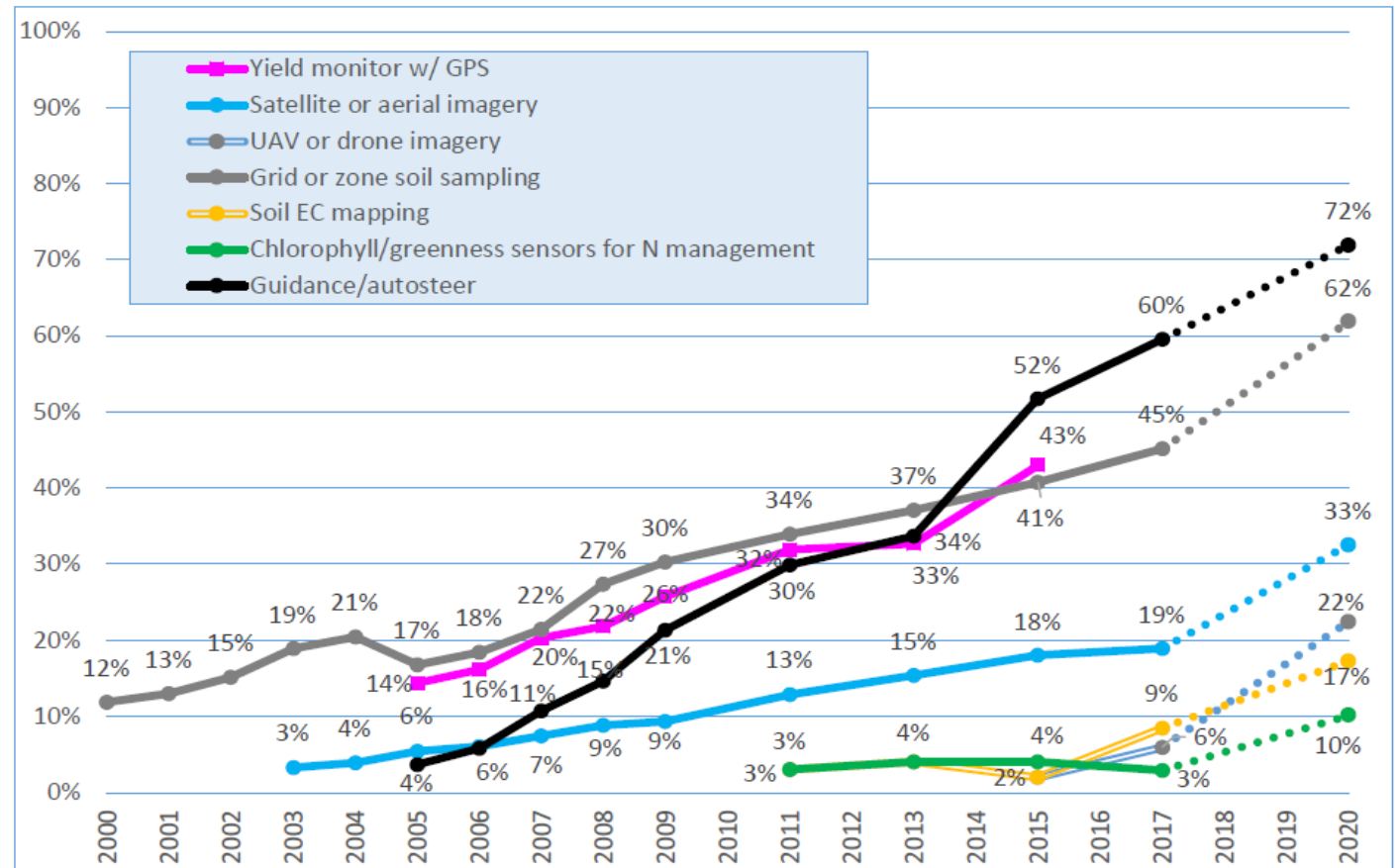


INTRODUCTION: Precision Agriculture Technologies

Global precision agriculture technology market predicted to reach **\$13.7 billion CAD by 2025** (CAGR of 13.7%)

- BIS Research 2018

Source:
2017 Precision Agriculture Dealership Survey (Crop Life & Purdue University)



CHALLENGE SCENARIO: Precision Agriculture Technologies

The Ministry of Agriculture is seeking technologies that can allow for improved:

- ✓ Adaptation of precision agriculture tools
- ✓ Adoption of precision agriculture tools



CHALLENGE SCENARIO: Precision Agriculture Technologies

Examples of technologies that could improve the **adaptation** and **adoption** of precision tools include:

An affordable, easy-to-use cell phone application that integrates data from various sources (weather, sensor, soil test data) and is compatible with variable rate or autosteer technology systems

Wireless sensors linked to an integrated, data processing or big data analytics platform allowing farmers to better measure or monitor their on-farm or in-field nutrients



INTRODUCTION: Agri-Based Bioproducts in B.C.

Agri-based bioproducts are renewable products other than food and feed that are derived from agricultural, aquatic or forestry resources, or municipal wastes



INTRODUCTION: Agri-Based Bioproducts in B.C.

Bioproducts represent an opportunity to strengthen and diversify the agricultural sector through:

- ✓ Adding value to wastes
- ✓ Specialized higher margin farm gate production
- ✓ Product diversification
- ✓ Added revenue streams
- ✓ Improved environmental sustainability

Examples include:

Bioenergy

Biofuels

Biochemicals

Biomaterials



CHALLENGE SCENARIO: Agri-Based Bioproducts

The B.C. Ministry of Agriculture is seeking projects that will:

Produce advanced materials and products that support regionally-specific bio-product value chains to create alternatives to fossil fuel-based technologies, materials, fuels, and chemicals



CHALLENGE SCENARIO: Agri-Based Bioproducts

The B.C. Ministry of Agriculture is seeking projects that will:

Transform waste streams and process outputs into lower-carbon, bio-based products, energy, and chemicals and/or reduce on-farm emissions and enhance waste utilization



CHALLENGE SCENARIO: Agri-Based Bioproducts

Examples of agri-based bioproducts include:

The development of innovative bio-plastics from non food-based agricultural feedstocks as substitutes for conventional hydrocarbon-based plastics

The conversion of agricultural crops and waste into bio-gas for heat and/or power, as well as nutrients, bio-chemicals, and fertilizers





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