AGRITECH INNOVATION CHALLENGE I 2016

INNOVATION CHALLENGE

Loss Reductions & Pest Management

Introduction

- Over 200 land based and 100 sea based commodities
- Total farm cash receipts:
  - $1.51 billion in 2015 from sale of crops
  - $1.53 billion from sale of cattle, hogs, poultry, eggs, dairy, honey and other animals and animal products
  - Economic losses from pests and predation can be considerable
  - Estimated predation losses to BC beef sector was $ 4 million in 2011
  - Impacts from invasive plants predicted to rise to $139/year by 2020

Summary of Impact

- Social impacts:
  - Creation of dangerous driving conditions – i.e. ungulates on roads
  - General nuisance and disturbance in urban areas (i.e. bird scare cannons)
  - Potential for spray drift
- Economic impacts:
  - Direct control and management costs
  - Destruction of pastures and crops
  - Profit loss (direct losses, decreased quality, impact to exportability)
  - Potential and actual disease transmission

Scenario #1 – Drones as Tools

- **Innovation Challenge**
  - An economic solution to software, and interpretation of NDVI, NIR in relation to specific crops and crop health
  - Economically viable and producer friendly software for birds of prey and drone scaring identification of predator presence (wolves, coyotes, bears)
  - Camera and software to distinguish elevated livestock temp, an identification of carcasses and herd health

Scenario #2 – High Value Crop/Livestock Loss

- Stored feed, grain, as well as other high value crops are at risk due to ungulates
- Predator control fencing to address 4 legged predators
- **Innovation Challenge**
  - Development of an economical and user friendly feedback electric fencer
  - Include cell phone notification
  - Could be linked to watering system updates
  - Reducing labour
  - Predator deterrence

Other pest challenges where innovative solutions are needed include:

- **Translation** of existing crop decision tools into other languages (i.e. Punjabi)
- **Pest Management** solutions to invasive plants in riparian areas
- **Data Management,** there are reams of spatial data from crop health how to best utilize

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