# Wisconsin Potato & Vegetable Growers Association, Inc.

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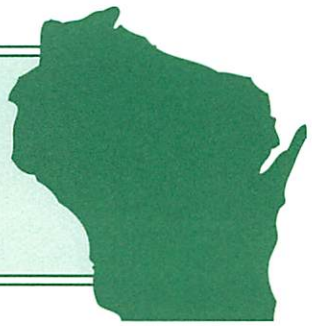

**DATE:** **September 3, 2015**

**TO:** **UW Potato Researchers**

**FROM:** **WPVGA Board of Directors**
**UWCALS Research Division**

**RE:** **Request for Proposals for 2016 WPVGA Potato Research**

The Wisconsin Potato & Vegetable Growers Association is requesting proposals for potato research for crop year 2016. Specifications for research are as follows:

**Base Funding Proposals:**

Production (Goldman)
Seed Certification (Charkowski)
Weed Management (Colquhoun)
Disease Management (Gevens)
Insect Management (Groves)
Potato Variety/Advanced Selection (Navarro)
Nematology (MacGuidwin)
Breeding (Endelman)
Fertility Management (Ruark)

Base Funding Proposals (BFPs) should include a description of the ongoing disciplinary potato research, new techniques/sciences applied to the base program and linkages to the WPVGA/WWF/UW Collaboration. The Wisconsin Invests cover sheet should be used for grower review purposes. In addition, Base Funding Proposals must include a completed current and pending support form for the project's PI (suggested template: www.csrees.usda.gov/funding/templates/current_pending.doc). ***Proposals must be received at Ag Hall by October 7, 2015. Any requests received after that date and time will not be considered for funding. NO EXCEPTIONS!!***

Funding from the Wisconsin Specialty Crop Block Grant Program may be utilized to support the 2016 Base Funding awards. The prime source of such funding is federal USDA/AMS to the Wisconsin Department of Agriculture, Trade, and Consumer Protection to WPVGA/WPIB. Awards supported through this funding stream will be required to adhere to flow-down terms and conditions from the federal and state sponsors.

**Competitive Grant Proposals (CGPs)**

The WPVGA will be accepting competitive grant proposals for innovative potato research with a special emphasis on water related topics. Grants should take into account critical areas of concern to the Wisconsin potato industry. Please see the enclosed sheets with more information on the research priorities that have been established. Proposals should not exceed $12,000, and the Wisconsin Invests cover sheet should be used for grower review purposes. ***Proposals must be received at Ag Hall by October 7, 2015. Any requests received after that date and time will not be considered for funding. NO EXCEPTIONS!!***

***All grant proposals should be routed via WISPER to UW CALS Research Division in Ag Hall.***

# Wisconsin Potato and Vegetable Growers Association
# Research and Education Priorities

Groundwater Task Force Research Topics:

- Expand hydrologic data collection.
- Groundwater recharge.
- ET measurement in crop and non-cropland.
- Wetland mitigation.
- Is it pumping or ET?
- Evapotranspiration.
- Water conservation through improved practices.
- Water conserving crops.
- Examine drainage systems.
- Create a procedure for establishing minimum groundwater levels.
- Parameterize IBIS.
- Groundwater flow evaluation.
- Drought resistance crop systems.
- Drip irrigation.

Storage Issues:

- New and existing variety agronomic and storage practices.
- Identification of silver scurf and colletotrichum to determine preventative measures in storage.
- Reducing post harvest losses through improved knowledge of pathogens present and pathogen numbers on tubers.
- Physiological age research and recommendations.
- Development and testing of in storage chemistry including piler application of storage materials related to foliar applications.
- Yield loss and storage loss due to sprayer tracks.
- In storage effect of changing tuber temperatures, the rate of change and its affect on fry color including varietal differences, related to long and short term storage periods.
- Measuring Pink-Eye going into storage and ensuing development of Pink rot over time or (predictability?).
- Is it possible to significantly reduce potato sugar levels after tubers have been chilled (short-term vs. long-term) in storage by any means? If so, how and to what degree?
- Reconditioning capability by variety.
- What is the value in disinfecting storages?
- Development of storage BMP for different varieties.

Breeding:

- Breeding for resistance to necrotic strains of PVY & screening for varieties that may already have such resistance.
- Improving the quality of Breeder's seed through PVY management.
- Marker assisted plant breeding.
- New fresh market varieties.
- Plant genomics.
- Improved business model for the
  - Breeding program.
  - Agricultural Research Stations.
  - SpudPro.

Entomology:

- Colorado potato beetle resistance – choosing a spray program that works.
- Review threshold recommendations for new and existing varieties.
- CPB resistance in new varieties.
- Product mode of action in preventing resistance and related educational programming.
- Changing application intervals with new chemistries and related educational programming.

Pathology:

- Developing reduced risk and cost effective disease management programs.
- Fungicide spray program evaluation.
- Late blight – strain ID effective control scheme.
- Early die complex – the genetic question.
- Control of common scab.
- Development of systemic fungicide .
- Fumigation guidelines for new varieties.
- PVY control.
- Storage soft rot involving pythium leak.
- Tobacco rattle virus in seed and soil powdery scab relationship.
- Biological control of field and post harvest pathogens.
- Value of late blight control – cost benefit analysis.
- Sprayer tracks and yield loss.
- Colletotrichum – black dot.
- IPM – Pesticide reduction.
- Evaluating stem rot – Incidents, causes and remedies.
- Fumigation type benefits through crop rotation.
- Are post harvest products, phostrol, best applied during the growing season or directly on the tubers at harvest?
- Identification and Management of Blackleg and Dickeya.

Vegetables:

- The economics of fresh market vegetables.
- Research storage protocol for onion storage by variety.
- Protocol for successfully storing carrots, cabbage and table beets.

Herbicides:

- Varietal response to different chemistries.
- Weed control in late emerging varieties.
- Late season weed control.

Fertility:

- Effectiveness of nontraditional amendments on value and crop quality.
- Crop rotation benefits.
- Value of variable rate fertilizers.
- Varietal differences regarding petiole sampling.
- Environmental impact of petiole sampling.

Water Management:

- Equipment evaluation.
- Sensing equipment evaluation.
- Land use / crop rotation / native landscape.
- Low input / maintenance crops.
- Drought resistant production schemes and systems.
- ET.

Technology:

- GPS equipment evaluation.
- Irrigation equipment evaluation.
- Moisture sensor evaluation.
- Storage and storage communication system evaluation.

Miscellaneous:

- Vine kill effectiveness and skin set.
- Late season applications that promote bulking or improve sugars at harvest (boron, other products).

**Notes from the Research Summit – I have selected topics from our discussion / notes**

Seed Issues:

- Predicting physiologic age of seed (control and manipulation).
- Optimal tuber size (whole vs. cut seed).
- Scab – influence of the next generation.
- Soil borne and blemish disease.

Potato Breeding:

- Line Selection – variety and trait stability.
- Improving the culinary experience (predictability, texture, taste).
- Biotechnology.
- Quantitative trait analysis.

Alternative Farming Systems:

- Beds (rather than hills).
- Crop rotation (water and nutrient management (self-sustaining input management)).
- Free market / fresh market.
- Building a brand (Healthy Grown).

Integration of Dairy (Food Safety):

- Nutrient management plan (5 year rotation).
- Food safety (Application to harvest interval).
- Nutrient issues (Maximize N, Benefits of high P).
- Manure application / treatment methods.
- Interaction with disease.
- Organic matter.
- System management.

Fumigation Future:

- Importance of these tool(s).
- Efficacy and consistency.
- Reduced use (regulatory vs. consumer).
- Has the soil changed?
- How do we manage without fumigants?

IPM:

- Date collection technology (drone, imaging…).
- Weather / climate related challenges to pest management.
- Host resistance.
- IPM adoption / next step evolution / biology and climate evolution.
- IPM innovation.

Sustainability:

- Whole farm sustainability.
- Food safety integration.
- Integration of GMO.
- Food security.
- Document and validate (How to).

Fertility / NMP / Water Quality:

- Nutrient management – meeting crop needs.
- Rotation – nutrient efficiency.
- Challenges – water quantity, water quality.
- Yield goal shifts (400 – 600 cwt over 10 – 15 years).
- Technical assistance, resource assessments and voluntary conservation programs.
- Plant growth additives / amendments.
- Fertility rate and timing.

Water Management:

- Technology driven irrigation management.
- VRI based on soil type.
- Groundwater flow modeling – our contributions to the process.
- Ditch (drainage district) modeling study.
- Long-term outlook at our water resources.
- Soil variability in testing equipment.
- Potential and actual ET, variability by crop and variety.
- True ET of different landscapes and surface uses.
- Food Security; production to feed a growing planet population, distribution and waste.

Storage:

- Lengthening the storage season.
- Quality controls (CIPC, Disease, New Technologies).
- In-field pathogen monitoring.
- Storage predictability.
- Sensing capacity, data archiving, CO2, humidity.

Decision Support:

- Data collection integration (useful analysis, instant management).
- Data layers / implementation.
- Geo referenced data (application equipment).
- Accurate measurements.
- Data management design – what is needed?
- Industry coordination.

# ***IMPORTANT DATES***

- **October 7, 2015 – Grant request should be routed via WISPER to UW CALS Research Division in Ag Hall**

- **November 2 & 3, 2015 – Requests and progress reports heard at**
  **West Madison Agricultural Research Station**
  **8502 Mineral Point Road**
  **Verona, WI 53593**

- **January 15, 2016 – Researchers will be notified by this date of approved projects**