The Impact of Pests in Potatoes: Cost of control/management

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Potatoes and Pests
- Potatoes are an excellent source of nutrition for humans, but also for a multitude of pests and diseases
- Some potato pests and diseases will cause cosmetic damage which is a problem for tablestock growers, but not always a deal-breaker for processing
- Other pests and diseases will cause significant or total crop losses and are a major economic threat

Things to consider
- What is out there?
- Can I avoid or prevent the problem?
- Has an economic threshold been established?
- Can I tolerate some level of pest or disease?
- What products are available for control?
- What collateral damage will occur?
- Will the problem get worse?

What is out there?
- Know your seed
  - Understand tolerances for pests and diseases
  - Visit your seed grower
  - Request results from post-harvest tests
  - Prevent spread of diseases between seed lots
- Scout fields
  - Visit fields and check for unusual patterns in the crop
  - Remember to check the underside of the leaves

Avoidance / Prevention
- Healthy crops resist attack by pests and diseases
  - Good seed - don’t buy the problem
  - Resistant varieties/variety selection
  - Appropriate planting time - don’t give diseases an advantage
  - Good fertility
  - Reduce stress from competition, drought, mechanical injury
- Crop rotation considerations to avoid diseases and pests
  - Recommend a 4 year rotation
Avoidance / Prevention

- Fungicides typically work best as preventative measures
  - Good coverage before row close
  - Repeat applications as foliage grows or fungicides wear off
  - Rotate FRAC groups

- Insecticides
  - Timing is important - spray at vulnerable insect life-cycle stage, pay attention to the weather
  - Consider beneficial insects before spraying

Weed Control (More from Pam)

- Many weeds act as alternate hosts for pests and diseases (CPB, aphids, virus, blight, etc.)
- Weed seeds create a problem that multiplies for subsequent crop years

Economic Threshold

- Presence of a disease does not always warrant control
- Early blight example (control may not increase yield)
- Psyllid example (spray may kill beneficial insects)
- Leaf hopper example (if no disease, damage is insignificant)
- Cost/benefit analysis
- Top-killing early may be a better option than disease or pest control

Can I Tolerate Some Damage?

- Perimeter sprays may work for pests that enter field edges
- Trap crops may work with some pests
- Targeted control may be appropriate
  - Kill the affected area, manage the rest of the field
  - Does the damage prevent sale or storage of the crop?
  - What will be the effect on subsequent crops?
  - Inoculum load

Product Evaluation

- Research your options
- Stock products you will need to prevent being affected by a shortage
- Compare cost and efficacy
- Consider pre-harvest interval, maximum applications, rotation, restrictions, mfg recommendations, label rates
- Alternative products
  - Phosphorous acid
  - Biologicals
  - Biological oils

Resistance Management

- Rotate chemical groups when choosing products
- Pay attention to products with multiple uses (seed, foliar and post-harvest control)
- Use label rates, not reduced rates
- Follow manufacturer’s recommendations with respect to time of application, water volume, adjuvants, etc.
Post-harvest Impact

- Potatoes tend not to improve in storage.
- The better the quality going into the storage season, the better chance you have of maintaining quality.
- Knowledge of risk and resistance will help you determine whether or not to apply post-harvest control products.
- Checking storage is as important as scouting fields.
- Some storage diseases affect cosmetic appearance of potatoes, while others can destroy the entire bin.

Thank you!

Questions?

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