

# Bruise Prevention Begins Before Planting

**Mike Thornton and Nora Olsen**  
**University of Idaho**

## ***Main Points***

- Select fields that are best suited for growing potatoes, that include high residue crops in the rotation, and are free from excessive rocks.
- Avoid tillage practices that create clods that will not break down during the growing season.
- Focus on achieving a uniform stand to promote consistently sized tubers.
- Use a balanced fertility program to keep vines green until shortly before vine-kill.

Anything that makes separating soil from potatoes difficult during harvest and handling can increase the risk of bruise damage. Two of the biggest culprits in this battle are clods on medium and fine-textured soils, and rocks in any soil type. You can do a lot to make the job of soil separation easier by proper field selection, and not working soils that are wet. Likewise, immature and over mature potatoes are more susceptible to bruise damage, which can make any impacts associated with handling operations express as larger areas of blackspot or bigger shatter bruises. Planter and fertilizer management can have a big impact on tuber size and maturity at harvest. See the information below for guidelines on how to approach this spring with a focus on quality.

## ***Pre-plant***

Utilize crop rotations that increase soil organic matter levels to reduce soil crust formation, improve water holding capacity and keep soil tilth the best for bruise reduction. Organic matter will also help improve soil texture, reduce clod formation, and prevent water puddling. Spring plowing, disking, or cultivating of wet soil results in the formation of clods, particularly in heavy texture soils. These clods persist through harvest and increase the levels of blackspot, shatter bruise, and skinning. If possible, deep rip or chisel plow the previous fall to break up hard pans. Soil freezing and thawing will help soften clods brought to the surface during deep tillage. Remove stones from the field before planting to help keep rocks from being buried in the potato row at planting.

## ***At Planting***

Manage cutting and planting operations to achieve a uniform plant stand. Erratic stands mean more variable tuber size and maturity, resulting in greater bruise susceptibility. Uniform stands result in more uniform tuber flow in the harvester, which results in less bruising.

Timely planting will allow the crop to reach desired maturity before harvest, thus reducing susceptibility to bruising. Avoid excessive nitrogen fertilization, which delays vine maturity and can increase tuber susceptibility to bruising at harvest. On the other hand, inadequate fertility that results in premature senescence of the crop can also increase susceptibility to bruising. That is why it is important to have a balanced fertilizer program. Pay particular attention to potassium

as a deficiency of this nutrient can affect the ability of the tuber to heal wounds and fight disease, and may increase susceptibility to blackspot bruise.

Control Rhizoctonia, Verticilium wilt, and other pathogens that can cause premature stem or vine death. These diseases can produce a harvested crop of varying levels of maturity that may be more susceptible to bruising.

**Some of the information in this article was adapted from Extension Bulletin 725 – “Preventing potato bruise damage”, available as a pdf from the UI publications website: <http://www.cals.uidaho.edu/edcomm/pdf/bul/bul0725.pdf>**