



Imperial County

Agricultural Briefs



University of California
Agriculture and Natural Resources

Features from your Advisors

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LATE BLIGHT OF CELERY

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Celery acreage has been steadily increasing in the Coachella Valley. (See Table 1 for data) Celery is a crop that is well suited to well-drained sandy soils of the desert. It has a fibrous shallow root system that can be drip irrigated. Celery production requires close attention, as there are several diseases that can affect the crop at different growth stages. (Other celery diseases will be covered in future articles)

Table 1. Celery¹ acreage and gross crop values for the Coachella Valley²

YEAR	ACREAGE	GROSS CROP VALUE
2014	748	8,850,000
2013	574	8,965,000
2012	522	7,397,400
2011	478	5,306,900
2010	391	5,603,600
2009	412	5,863,000
2008	254	2,757,900
2007	331	4,569,900
2006	307	2,596,100
2005	365	2,292,700

¹Riverside County Agricultural Commissioners Crop Reports

²Celery is packed in 50-pound boxes

Late Blight of Celery

A problem that shows up late in the growing season is Late Blight of Celery. It is also called Septoria Leaf Blight. This disease is caused by the fungus *Septoria apii cola*, other synonyms are *S. apii* and *S. apii-graveolentis*. *Septoria apii cola* is an imperfect fungus meaning that no sexual stage has been observed in its life cycle.

The fungus can be in celery seed or it can survive in debris of the previous celery crop. The fungus enters the plant through the epidermis or through the stomata. The stomata are the cells on the epidermis that allow gases such as carbon dioxide and water vapor and oxygen to move in and out of the plant. Stomata can change in size openings thus affecting the rate of photosynthesis and transpiration of the plant depending on the environmental conditions.

Late Blight disease symptoms include multiple leaf spots on older leaves and petioles that will eventually become necrotic as in Figure 1. The affected leaves are in the canopy or the outer leaves of the canopy closer to the ground. This disease can be field diagnosed when the presence of pycnidia is observed with a hands lens in the necrotic tissue. This sign of the fungus is what distinguishes Late Blight from Early Blight. On the pycnidia, multicellular spores (conidia) are produced in huge quantities. Rainfall, overhead irrigation, workers and machinery working in a wet field can all help spread the conidia.

Favorable conditions for Late Blight are heavy precipitation, a very dense plant canopy, poor air movement and the foliage staying wet a long period of time. (See Figure 2) Temperature at 70F also include a minimum of 24 hour of dew periods or interrupted with 12 hours of wet/12 hour dry/12 hour wet (dew) again.

Control:

There are seed treatments that can be utilized. Field control may require fungicide treatments on a regular schedule once the fungus is observed. A two year field rotation out of celery is adequate as this fungus is short lived in the crop residue. Once control measures are taken, check the reentry intervals and check to see that the treatment has been effective; that is not producing conidia. See Figure 3.



Figure 1. Leaf symptoms of Late Blight: spotting and yellowing of the affected tissue. In the spots are the pynidia that produce conidia.

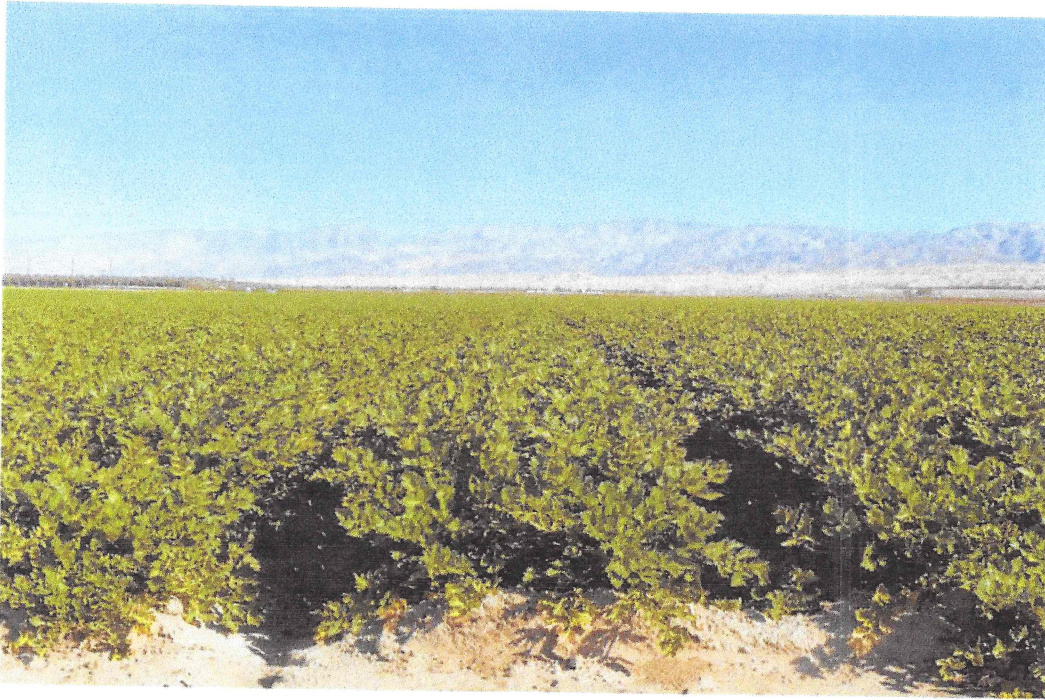


Figure 2. Celery has a very dense canopy. This field is about two weeks from harvest.



Figure 3. Search for Late Blight in the crown of the plants, check to make sure fungus has dried out and is not producing conidia.