

Chimeras

On occasions plants with contrasting colored tissue, yellow next to normal green, are observed in fields. These symptoms can initially look like a disease or nutritional deficiency. However, chimeras are the result of a spontaneous genetic mutation that occurs in a cell. If the mutation occurs at or near the apical meristem of the developing plant, large areas of the leaf may be affected. If the mutation occurs away from the zone of leaf development, then the chimera may be small or not noticeable. In chimeras, the cells lose their ability to produce chlorophyll and the resulting tissue is white or yellow.

Chimeras occur rarely in production fields. In my experience, you may only see one or two in a whole field of plants. Usually they occur singly and that is a sign that the issue is not a disease or other abiotic issue which would typically occur on more than one plant at a time in a field. The bottom line is that chimeras are basically a curiosity and of no consequence in terms of yield. However, chimeras that result in variegation are commonly used in the ornamental horticulture industry. There are other chimeras that do not affect chlorophyll production but affect other aspects of plants such as the lack of development of thorns on thornless blackberries.

Chimeras on various plant species:



Broccoli



Celery



Celery (close up)



Kale



Kale (close up)



Romaine lettuce (white chimera)



Romaine lettuce (white chimera)



Romaine lettuce (yellow chimera)



Spinach



Tomato