PEPPER STIP

» Stip is a disorder of peppers in which the fruit develop discolored spots near harvest.
» Nutrient levels, temperature, light levels, and genetics may all play a role in stip development.
» Planting stip-insensitive varieties and avoiding excessive nitrogen applications may help reduce the incidence of stip.

Stip is the name of a pepper disorder where the fruit develop spots as they mature. The name comes from the German word "specks". Other names for the disorder include black spot, colour (color) spot, green spotting, green pitting, spotting, bitter pit, and pepper spot.¹²

SYMPTOMS AND OCCURRENCE

Stip can affect several types of peppers including bell, pimento, and the elongated New Mexico/Anaheim types. The disorder appears as subcutaneous spots (or lesions) on the fruit. The spots can be gray, brown, black, green, or yellow in color (Figure 1). They are slightly sunken, oval or irregular in shape, and can vary from 1 to 15 mm in diameter, typically about ¼ inch in diameter. The spots can occur singly or in groups, with as many as 30 spots per pod.² The presence of the spots significantly reduces the marketability of the fruit.³

The occurrence of the disorder is difficult to predict, being somewhat sporadic from year to year. On bell peppers, it is most commonly observed in the late summer and fall, (from August to mid-September in North America). It is most noticeable on mature red fruit. However, lesions also can occur on mature green fruit.² In Arizona and New Mexico, symptoms of stip are seen most frequently on elongated chili peppers during the hottest parts of the growing season.⁴

With bell peppers, older, open-pollinated varieties (such as Yolo Wonder) tend to be more susceptible to the disorder, with hybrid varieties being fairly resistant.³⁵ There is some variation in chili type peppers, but most are fairly susceptible (Figure 2).⁴

Several suspected causes of stip have been investigated over the past 30 years. The disorder is believed to be physiological in nature, as no biotic pathogens (bacteria, fungi, nematodes, or viruses) have been associated with the symptoms, and there is no link between symptoms and insect damage. There is some evidence that nutrient imbalances involving nitrogen (N), potassium (K), and calcium (Ca), as well as temperature extremes and available light levels may be involved in the problem.¹

There is some association of the disorder with fruit size. The incidence and severity of symptoms tend to be higher on open-pollinated varieties grown under conditions that promote the production of large fruit (i.e., high N levels). The problem is less common on newer hybrids that have been

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**CONTROL**

With an incomplete understanding of the cause of stip and the possible interaction of factors that may be involved, it is difficult to provide sound control recommendations until more is know about the problem. However, based on the research done to date and field observations of the problem, the current recommendations for managing stip include growing resistant varieties and selecting newer hybrids over older open-pollinated varieties, especially for fall harvested crops. Also, avoid excessive applications of N and K. The effects of soil and foliar applications of Ca have been inconsistent and are not recommended at this time.

**Sources:**


**For additional agronomic information, please contact your local seed representative. Developed in partnership with Technology, Development & Agronomy by Monsanto.**

Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. The recommendations in this article are based upon information obtained from the cited sources and should be used as a quick reference for information about pepper stip. The content of this article should not be substituted for the professional opinion of a producer, grower, agronomist, pathologist and similar professional dealing with this specific crop.

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**TABLE 1. PERCENT INCIDENCE OF FRUIT SPOTTING ON GREENHOUSE GROWN PEPPERS TREATED WITH VARYING LEVELS OF NITROGEN UNDER FULL-LIGHT OR SHADeD CONDITIONS.**

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Light Conditions</th>
<th>Nitrogen Applications (mg/l)</th>
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<td></td>
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<tr>
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</tr>
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