

## Disease development notes for Winchester VA, 2016.

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Disease update web site: <http://treefruitdisease.blogspot.com/>

**Scab and rust infection periods: Mar 13-15:** 55-hr wetting with ascospore discharge, but little or no green-tip at Virginia Tech AREC; some other areas may have had tissue exposed, resulting in earlier secondary infection.

After a slow start this year, we ended up with **23 scab infection periods Apr 22-May 31:** Apr 22, Apr 28, Apr 30-May 1, 2, 3, 4, 5-7, 8, 9-12, (13 inf. periods in 15 days!); then May 17, 19, 21, 21-23, 24, and May 26-31. This year some late infection may appear on fruit in storage. (Where there is heavy secondary foliar infection, consider marketing fresh-market fruit early).

**Rusts:** Thirteen of the above scab infection periods were also favorable for cedar-apple rust, until inoculum from the galls was depleted about May 12. In spite of heavy cedar-apple rust pressure on leaves, fruit mostly escaped quince rust infection, which can occur with warm wetting periods during blossom susceptibility at the pink to petal fall stages. Occasional quince rust infection may have occurred on unprotected late bloom.

**Powdery mildew:** Mildew conidia were first available Mar 16. Because there were 21 dry weather "mildew infection days" by May 5, and 35 mildew infection days through June 13, there is a lot of secondary mildew infection present on poorly protected trees.

**Fire blight:** Fire blight infection days, as confirmed by Maryblyt, occurred on Apr 21, 22, 24-26 and May 2-3. Natural blossom blight symptoms were first observed on York apple May 9. Blossom and shoot symptoms have been observed in commercial orchards. There may have been some infection of late bloom stimulated by frost/freeze conditions.

**Summer diseases/rots:** Commercially, there was more moldy core this year because of the extended wetting that occurred during the post-bloom period while the calyx tube remained open on Red Delicious. Frogeye leaf spot and rots were observed in situations where there were fruit mummies or dead twigs. After May 26 we have had 18 possible "bitter rot infection periods" with some of the wetting occurring at 70° or higher. Bitter rot was observed on Honey Crisp at the AREC as early as Jun 22.

For predicting the development of the sooty blotch and flyspeck (SBFS) fungal complex, we record wetting hours from rainfall or dew, starting 10 days after petal fall. This year we started wetting hour accumulation from May 14. As of Aug 30, accumulated wetting hours (ACW) toward the 250-wetting hour threshold for specific treatment against the SBFS fungal complex were: at 909 ft elevation, 901 hr (with the 250-hr threshold reached Jun 5 and SBFS observed July 6); at 952 ft elevation, 675 hr (threshold reached Jun 23); and at the 983 ft elevation, 511 hr ACW (threshold reached Jun 28). A NEWA station was installed in July, too late for the SBFS model.

Early harvest was relatively dry, but a 6-in. rain Sep 28-30 may impact potential storage rots.

### Monthly precipitation and temperature summary

Month	Precipitation (inches)			Mean Temperature °F			
	98-yr mean		VT-AREC	10-year means		2016 means	
	Winchester	2016		VT-AREC		Research Farm	
				maximum	minimum	maximum	minimum
March	3.16	1.15	2.57	55.4	35.3	60.1	40.3
April	3.13	1.72	3.41	65.3	43.9	65.5	43.6
May	3.76	4.51	3.65	74.6	53.7	70.1	53.9
June	3.92	4.32	4.80	81.5	62.1	84.6	65.2
July	3.80	5.16	2.12	87.0	65.5	88.5	66.5
August	3.65	2.37	1.16	85.2	64.4	87.8	67.9