

Rethinking False Spring Risk

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Temperature Thresholds for Damage: Agricultural vs Ecological

Table 1: Comparing damaging spring temperature thresholds in ecological and agronomical studies across various species and phenophases.

Sector	BBCH	Species	Temperature (°C)	Type	Source
Ecological	9-15	Sorbus aucuparia	-7.4	50% lethality	Lenz <i>et al.</i> (2016)
Ecological	9-15	Prunus avium	-8.5	50% lethality	Lenz <i>et al.</i> (2016)
Ecological	9-15	Tilia platyphyllos	-7.4	50% lethality	Lenz <i>et al.</i> (2016)
Ecological	9-15	Acer pseudoplatanus	-6.7	50% lethality	Lenz <i>et al.</i> (2016)
Ecological	9-15	Fagus sylvatica	-4.8	50% lethality	Lenz <i>et al.</i> (2016)
Ecological	Spring Onset	All	-2.2	hard	Schwartz (1993)
Ecological	Spring Onset	All	-1.7	soft	Augsburger (2013)
Ecological	All	All	2 SD below winter TAVG	cold-air outbreaks	Vavrus <i>et al.</i> (2006)
Ecological	9+	Eucalyptus pauciflora	-5.8	elevated CO2 and temperature threshold	Barker <i>et al.</i> (2005)
Ecological	9+	All	-2.2	7 day threshold	Peterson & Abatzoglou (2014)
Agrinomical	9+	All	2	Risk threshold for clear nights	Cannell & Smith (1986)
Agrinomical	Floral	Vaccinium spp.	-4.4 to 0	sprinkler protection threshold	Longstroth, 2013
Agrinomical	9	Rosaceae	-7.2	10% lethality	Longstroth, 2012
Agrinomical	9	Rosaceae	-13.3	90% lethality	Longstroth, 2012
Agrinomical	All	All	Varies	Radiation Frost	Barlow et al., 2015; Andresen, 2009
Agrinomical	Floral	Wheat	-4 to -5	10-90% lethality	Barlow et al., 2015
Agrinomical	Vegetative	Wheat	-7 for 2hrs	100% lethality	Barlow et al., 2015
Agrinomical	Vegetative	Rice	4.7	lethal limit	Sanchez et al., 2014
Agrinomical	Vegetative	Corn	-1.8	lethal limit	Sanchez et al., 2014
Agrinomical	Vegetative	Wheat	-17.2	lethal limit	Sanchez et al., 2014

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