

Smooth Delight and Smooth Zest Low Chill Nectarines

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In the late 1990s, the **Prunus Breeding and Genetics Program** began to develop a series of early ripening nectarine cultivars adapted to the low-medium chill zone (300-500 CU) of the southern USA. This work has resulted in 4 new nectarine cultivars that ripen in early to mid May in the low-medium chill zone of Texas. These nectarines bloom about 5-6 days (SD1 and SD2) and 13-14 days (SZ1 and SZ2) before 'Flordaking' and ripen between 'Flordaking' and 'TexKing' except for SZ1 which ripens one day earlier than 'Flordaking' (Table 1). Each of the two pairs of nectarines complement each other as SD1 and SZ1 have white flesh and SD2 and SZ2 have yellow flesh. SD1 and SD2 are sister seedlings from a cross between 'Sunmist' a high acid white fleshed nectarine and 'Arctic Star' a low acid white fleshed nectarine. SZ1 was selected from a cross between a white fleshed, semi-freestone peach, TX3D75W, and the low chill peach 'TexFirst', and SZ2 was selected from a cross between two unreleased nectarine selections: TX1B38N and TX95128N.

Table 1. Bloom time, ripe date, fruit weight, firmness, and total soluble solids of Smooth Delight and Smooth Zest Nectarine Cultivars in Floresville, Texas (2005-2010).

| Cultivar | Full bloom | Ripe date | Weight (g) | Firmness | TSS (%) |
|------------|------------|-----------|------------|----------|---------|
| SZ1 | 06 Feb | 05 May | 120 | 7.4 | 11.4 |
| Flordaking | 19 Feb | 06 May | 138 | 6.0 | 8.6 |
| SZ2 | 05 Feb | 09 May | 142 | 7.2 | 11.0 |
| SD1 | 14 Feb | 11 May | 119 | 7.1 | 9.6 |
| SD2 | 13 Feb | 10 May | 129 | 7.5 | 11.6 |
| TexKing | 18 Feb | 18 May | 143 | 6.9 | 9.9 |
| Sunraycer | 12 Feb | 19 May | 128 | 7.0 | 9.0 |

Full bloom = 60-80% flowers open, Ripe date = date when 20% of the fruit is firm ripe. Rating scale 0 – 9; 0-4 = unacceptable, 5 = marginal, 6 = good, 7 = very good, 8-9 = excellent for commercial use. SZ1 = Smooth Zest One, SZ2 = Smooth Zest Two, SD1 = Smooth Delight One, SD2 = Smooth Delight Two.



Smooth Delight One



Smooth Delight Two



Smooth Zest One



Smooth Zest Two

Smooth Delight and Smooth Zest Nectarines

SD1 and SD2 nectarines bloom approximately five days before 'Flordaking' and 'TexKing' and with 'Sunraycer' in the low-medium chill zone, while SZ1 and SZ2 reach full bloom about one week before SD1, SD2, and 'Sunraycer' (Table 1). Based on the relative bloom times of standard cultivars, SD1 and SD2 need 350 chilling units (CU) and SZ1 and SZ2 need about 200-250 CU to break dormancy. SD1 and SD2 have produced consistently in zone 5 (300-500 CU) of Texas (Fig 1). They have potential in zone 4 (450-600 CU) with frost protection and further south in zone 6 (250-400 CU) although they still need further testing in these regions for confirmation. SZ1 and SZ2 can produce in zone 7 (200 CU) and up to zone 4 with frost protection.

Ripening and Quality of the Nectarines

These pairs of nectarine cultivars ripen in early to mid May in the low-medium chill region (Table 1). All four are clingstones and have medium to large fruit size (Table 1) and good to excellent flavor when properly managed and thinned. The mean soluble solids for these cultivars when picked mature are similar to or better than the commercial cultivars. SD1 and SD2 are subacid nectarines whereas SZ1, and SZ2 are acid nectarines. SD1 and SZ1 have white flesh and SD2 and SZ2 have yellow flesh. All four have an attractive ground color with a red blush over 40% to 90% of the fruit surface, and varying amount of sugar speckles depending on the cultivar and environmental conditions.

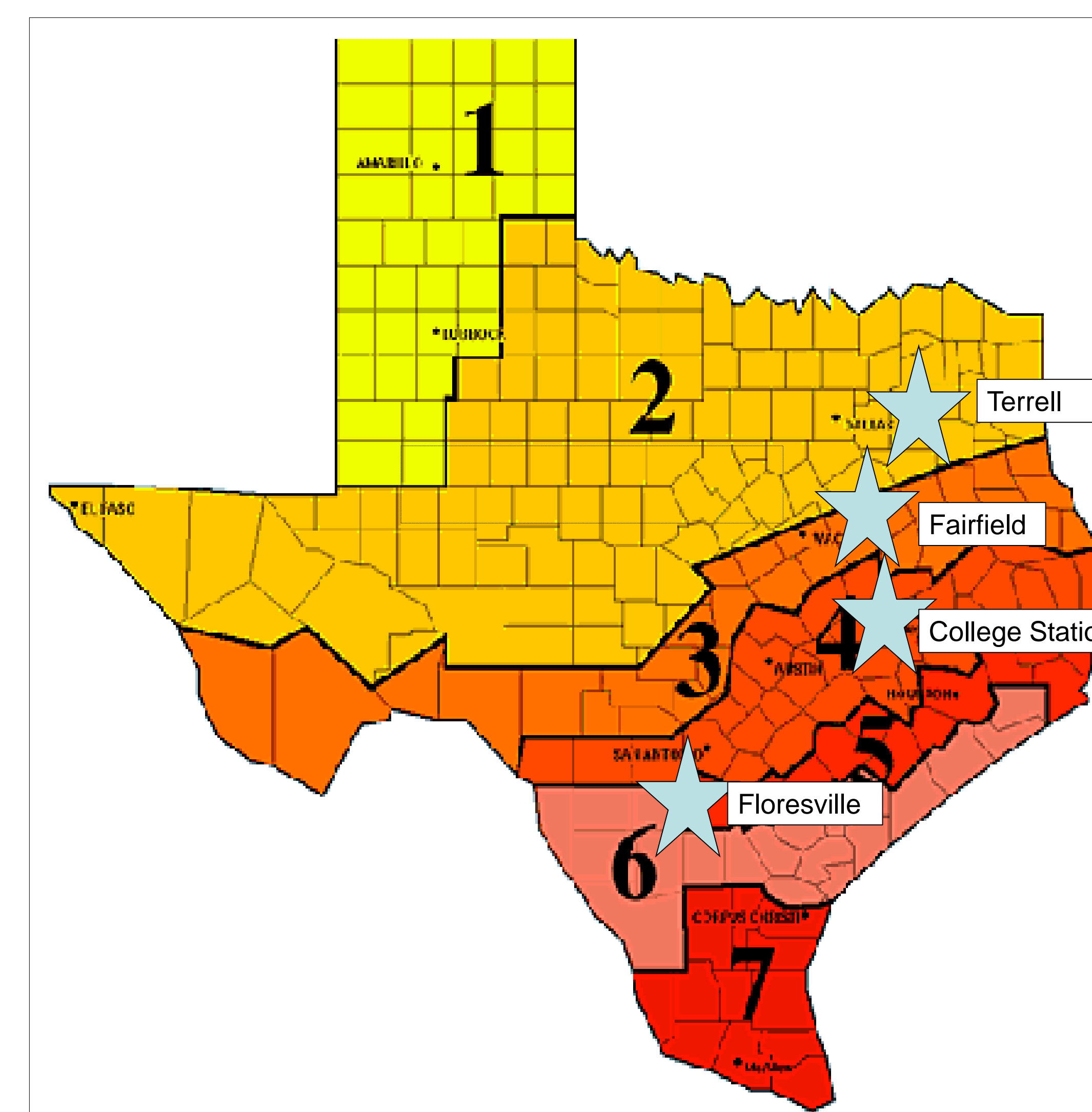


Figure 1. Chilling zones in Texas.

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