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Preharvest Treatment With Giberellic Acid Prevents Woolliness Occurrence After Cold Storage of 'Chiripá' Peach

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In 'Chiripá' peach, woolliness is a major physiological disorder that affects the postharvest quality. We have previously observed that woolliness occurs in approximately 30–40% of the fruit after 25–35 days of cold storage (CS) at 0°C and 90–95% relative humidity (RU). Supplying CS with ethylene application or intermittent warming, or using controlled atmosphere, the wooliness can be prevented, as a result of better ripening process with a good balance of polygacturonase (PG) and pecthyl methyl esterase (PME) activity. In addition, some studies showed that giberellic acid (GA3) in preharvest delays ripening, increases fruit size and extends the shelf life of peaches. In order to confirm this hypothesis, GA3 (100mg.L-1) was tested in 'Chiripá' peach: T1) GA3 at the beginning of pit hardening (GAS3-1); T2) GA3 at the end of the pit hardening (GA3-2); and T3) no GA3. During growing was measured the perimeter of fruits and immediately after harvest Chiripá peaches were CS at 1±1°C and 90-95 % of RU for 30 days. The evaluations were carried out just after harvest and 6, 24, 48 and 72 hours after CS. Peaches treated with GA3 at beginning of pit hardening (GA3-1) showed bigger size (40% bigger) and higher PME activity than the other treatments, but the ripening process was not delayed. After CS, the fruits corresponding to treatment T1 showed very low incidence of woolliness, attends less than 16% of fruits. In contrast, mostly of fruits from T2 and T3 treatments exhibited this chilling injury. These results showed that GA3, when supplied at beginning of pit hardening, increases peaches size and becomes a good way to prevent woolliness incidence, inducing PME and PG activity, simultaneously.

Keywords: Giberellic Acid (GA3), woolliness, Polygalacturonase(PG), Pecthyl methyl esterase (PME), 'Chiripá' peach.

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