

Improvement of Coffee Cup Quality by Ethylene

M. R. SONDAHL¹, M. PETRACCO²

¹Fitolink Corporation, Mount Laurel, N.J., USA

²Illycaffè S.p.A., Trieste, Italy

SUMMARY

Arabica cherries in South of Brazil take 220 days from flowering to ripening. Fruit ripening is not uniform because of multiple bloomings during the flowering season. The presence of unripe beans after harvest has been associated with a “metallic taste”. Previous studies have shown that ethylene causes accentuated abscission of young fruits (when applied early in the fruit development: Jan.-March) and accelerates cherry ripening.

This study evaluates the efficacy of early Ethrel applications (February) as a “pruning agent” of late flowers and late Ethrel applications (40 days before harvest) as a ripening regulator. Ethrel (2-chloroethane phosphoric acid solution) liberates ethylene soon after it is absorbed by plant tissues. Dosages must be around 500-1000 ppm to achieve effects with unshaded trees.

Two distinct field studies (1994 & 1996) involved two varieties (Yellow Catuai & Bourbon LC) and two locations (Cajuru & S. Sebastiao). It was possible to detect a positive influence of early Ethrel applications on cup quality, caused by differential pruning of very small pin-heads (late flowers) and evaluated by the average number of fruits on ground after 7 weeks of spraying: 325 @ 1000 ppm, 121 @ 500 ppm vs. 42 (control). While late Ethrel applications had effect of accelerating the apparent ripening process, no measurable difference on cup quality has being detected so far.