

Theorem 4.1. *For any $0 < \delta < 1$, any $\lambda > 1$, and any $p(\cdot), p_f(\cdot)$, let $R = 17$, $\kappa_f(\kappa) = 2q(\kappa)R\kappa$, and $T_0(\kappa) = 5\frac{\kappa_f}{\delta}$. Then $(\Pi_{fruit}^{p,p_f,R}, \text{extract}_{fruit}^{p,p_f,R})$ satisfies:*

- κ_f -consistency;
- chain growth rate $(T_0, g_0^{p,\delta}, g_1^{p,\delta})$ where

$$g_0^{p,\delta}(\kappa, n, \rho, \Delta) = (1 - \delta)(1 - \rho)np_f,$$

$$g_1^{p,\delta}(\kappa, n, \rho, \Delta) = (1 + \delta)np_f$$

- fairness (T_0, δ) .

in Γ_λ^p environments.