Let G be an n-vertex graph that contains r cherries, and let c be a coloring of the edges of K_n such that at each vertex every color appears only constantly many times. In 1979, Shearer conjectured that if $r = O(n)$, then such a coloring c must contain a properly colored copy of G. We confirm this conjecture and show that the same is true even for graphs G with $r = O(n^{4/3})$ cherries. This bound is up to a constant factor best possible.

We also show that an analogous result holds for colorings of $E(K_n)$ where for each color the total number of appearances is bounded, and then the aim is to find a rainbow copy of G.

This is a joint work with Benny Sudakov.