

'Kalakoa' ~ Hawaiian-Indian Corn

James Brewbaker

'Kalakoa' is a Hawai'i-bred "Indian" corn of many colors (Figure 1). Kalakoa means "of many colors" in Hawaiian and derives from the word "calico", as in "calico skirts". Corn evolved in Central and South America and became the primary food of indigenous American Indians around 5,000 years ago in Mexico. Today we recognize over 200 'races' of corn that vary greatly in many traits, with seed colors being a notably distinguishing feature between them.

'Kalakoa' is an open-pollinated variety that grows well throughout Hawai'i. Seeds are available from [CTAHR Hawaii Foundation Seeds](#). Plants are 8 to 10 feet tall in summer, with ears at 4 to 5 feet in height. If spaced 1 x 2 ft (24,000 per acre) each plant should produce one long ear (6 to 8"). Kalakoa needs no pesticides, as it is resistant to most of Hawaii's pests and diseases. Organic farmers will need the equivalent of 150 lbs of N per acre, equal to one ounce of N per 10 plants. A circular planting of 12 plants on a circle of 3 ft diameter assures good pollination of all plants.

Kalakoa's parents included one from the author's father, a variety that he derived from his professors at U. Minnesota, who in turn studied with professors like Dr. E. M. East in Harvard, one of the three scholars who rediscovered the genetic studies of Austrian monk Gregor Mendel. And Mendel, in turn, had also enjoyed pollinating corn and studying 'Indian' colors. Technically speaking, 'Kalakoa' segregates the following genes; A1, B1, bt1, C1, C1-l, Ch, p-vv, p-wr, p-rw, Pr, R1, R1-nj, y and y11. These are described in section "NILS Description" in www.ctahr.hawaii.edu/hfs together with their chromosomal location and genetic traits. Technically some of these genes affect the pericarp or seed coat, some the aleurone or outer layer of the endosperm, a few the embryo's tip, and some the cob itself.

'Kalakoa' was first made available at CTAHR's 1972 Corn Field Day in Waimānalo. It has been the subject of 28 cycles of recurrent selection (Figure 2) for yield, long ears, colors, and resistance to diseases and pests. It is formally known as HIC3 (Hawaii Composite 3), and its breeding history is described in detail by Brewbaker in 2009 J. Plant Registration 3:10-13.



Figure 1. Kalakoa and Indian sand painting of corn



Figure 2. Waimānalo farm crew with Kalakoa cycle 28.