



## Toichi Itoh's Four Original Intersectional Hybrid Peonies

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Harris Olson acquired the four Itoh intersectional peonies shortly after their introduction to the United States (refer to the APS Bulletin #184, March 1967). Since then, the plants have been grown both on the grounds of the Detroit Zoological Park and the Congregational Church of Birmingham (Michigan). So many people have off-handedly dismissed these four sibling peonies as identical that I felt it important to document the subtle differences as I see them before I reach a point when I will be unable to do so.



### **POSSIBLE METHODS TO DIFFERENTIATE THEM**

For many years I have known of differences in the vegetation between the plants, but had not photographed or otherwise documented those distinctions. Therefore, I decided to attempt to do this during 2002 and the 2003 bloom season. All four plants were tracked daily at the Congregational Church of Birmingham where they are planted about three-feet apart in a straight line without any apparent micro-climatic differences. All are in full mid-day sun with shade from trees in early morning and late afternoon. The soil is a friable clay-loam. Moisture is primarily from natural rainfall and the church is in climatic zone 5/6.

The flowers are essentially all the same between the four cultivars. The flowers open a good yellow with pale red flares at the bases of the petals-within 24 hours the flares have paled almost to disappearing against the yellow petals. The pistils all seem to be uniform yellow-green. Otherwise: YELLOW REA VEN has small, elongated flower buds that are drawn out to a sharp point, but by anthesis the buds are almost round. The enveloping sepals are, for the most part, red in color. The plant habit is short, wide and open.

YELLOW EMPEROR has elongated flower buds drawn out to a sharp point right up to anthesis. The enveloping sepals are, for the most part, red in color. The plant habit is short, wide and open. YELLOW CROWN has round and green flower buds; no red is apparent in the sepals and red shows only slightly on the stems. This cultivar has distinctive growth habit-it averages about six to ten inches taller than the others and the stems are stiffly upright to as much as 36 inches. YELLOW DREAM has round flower buds. The enveloping sepals are, for the most part, red in color. The plant habit is short, wide and open.

Some people have speculated that YELLOW EMPEROR might have a higher number of carpels than the others. In 2003, I spent considerable time evaluating that factor. As I suspected, the carpel number has no significance if the count is done over many flowers of all sizes and positions. All four named original Itohs typically have five to seven carpels in a normal flower. It is not uncommon, though, to see a carpel with two stigmas that has an incomplete division or has fully divided to the base, only to produce two undersized carpels. If you take into consideration these undersized carpels which I suspect are infertile, I found carpel counts to be as high as eight to ten in individual flowers-but never typical of an entire plant! The following summarizes those counts:

From the table below, it is apparent that I can find no real distinction between YELLOW HEAVEN and YELLOW EMPEROR. If I were to make a recommendation, it would be to grow one of either of these two and also YELLOW CROWN to get the full range of the physical phenotypes from this cross.

	TYPICAL CARPEL COUNTS	MAXIMUM CARPEL COUNTS
Yellow Heaven	5-7	8
Yellow Emperor	5-7	10
Yellow Crown	5-6	9
Yellow Dream	5	9

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