



Agriculture vs Biosynthetic

CROCIN

Crocin is an apocarotenoid, found in Crocus and Gardenia, responsible for the distinctive red color of Saffron. Some research has reported that crocin has potentials as neuroprotective, antioxidant, anticancer and antitumor. Here, we try to give the alternative idea for producing crocin through bacteria

SAFFRON MARKET

Main producer:

160,000
kgs of saffron



IRAN

47 ha

Promising market for saffron, estimation in 2026 the value is near US\$ 620Mn

Since extraction of crocin from saffron is not economically profitable thus saffron agriculture is not efficient for crocin production.

BIOSYNTHETIC ECONOMICAL BENEFIT

Cost reduction with synthesizing crocin:



- ✓ Plant cultivation
- ✓ Reagents for extraction
- ✓ Transportation, storage and maintenance cost
- ✓ Plant seeds

30%
in unit production

85%
in industrial scale

In the market, 1 gr crocin sold around 250 SEK or 30 USD

The industrial scale has high percentage reduction because it also reduces the cost of plantation land, human labors, instrumentation, insulation and buildings (facilities).

Reference:

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