Back to Tradition: Medicinal and industrial use of saffron

Rezvani Moghaddam, P. and A. Koocheki
Ferdowsi University of Mashhad, Faculty of Agriculture

Saffron (*Crocus sativus L.*) is the world's most expensive spice and 95% of the production is coming from Iran. It has been used as food additive, culinary proposes, medicinal and coloring agents. The novel use of saffron in recent years has been associated in cancer cure. This delicate spice has been utilized for thousands of years for different parts of world particularly Iran, China, Spain, Italy, India, Turkey and Greece. Saffron has been assumed to originate in Iran, Asia Minor and Greece. The stigma of Saffron is used in Chinese, Iranian and Indian traditional medicine for anodyne, antidepressant, a respiratory decongestant, antispasmodic, aphrodisiac, diaphoretic, emmenagogue, expectorant, and sedative, and its crude extract and purified chemicals have been demonstrated to prevent tumors formation, atherosclerosis, or hepatic damage. It was used in folk remedy against scarlet fever, smallpox, colds, asthma, eye and heart diseases. Saffron can also be used topically to help clear up conquer sores and to reduce the discomfort of teething infants. Saffron blooms only once a year (3–4 weeks in October–November) and it is hand harvested. After mechanical separation of tepals, the stigmas are hand separated from carpels and dried. The size and the amount of individual stigmas collected from each flower affected total yield and quality of saffron. Between 70,000 and 200,000 flowers are needed to produce 1 kg of dried saffron, which is equivalent to around 370–470 h of work. Consequently, the cultivation of this crop for its flowers and specifically its stigmas is very labor-intensive leading to high costs. The stigmas of the saffron flower contain many chemical substances. Carbohydrates, minerals, mucilage, Vitamins (especially riboflavin and thiamine) and pigments, amino acids, proteins, starch, gums, and other chemical compounds have also been described in saffron. The value of Saffron (dried stigmas) is determined by the existence of three main secondary metabolites: crocein and its derivatives which are

responsible for bright yellow color; picrocrocein, responsible for bitter taste; and saffronal responsible for spicy aroma. The amount of these compounds in dried stigma tissues is the most important indicator of quality of this spice.