The Antioxidant activities of Extracts from naturalized plant in Korea

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Buffalo-weed (*Ambrosia trifida L.*) and daisy fleabane (*Erigeron annuus*) is a naturalized plant native to North America, and *Humulus japonicus* of Cannabinaceae are ecosystem disturbance plants, widely distributed in the East Asian region. These plants disturb the native ecosystem in Korea by high reproductive rate and the growth inhibition ability of indigenous plant, and buffalo-weed pollen causes an allergic disease. To make the utilization, one of the methods for eliminating naturalized plants, the antioxidant capacity of naturalized plants was proven. Buffalo-weed, daisy fleabane and *Humulus japonicus* was extracted by 70% ethanol. After that, electron donating ability, ABTS radical scavenging activity and SOD-like activity of extracts were determinated. As a result of measuring the electron donating ability of naturalized plant(buffalo-weed, daisy fleabane and *Humulus japonicas*) extracts was shown 76.08%, 91.56%, and 52.32% at 1000 ㎍/㎖ concentration. ABTS radical scavenging activity of extracts of buffalo-weed, daisy fleabane and *Humulus japonicus* was shown each 95.12%, 98.66% and 99.42% at 1000 ㎍/㎖ centration. As a result of measuring the SOD-like activity of naturalized plant(buffalo-weed, daisy fleabane and *Humulus japonicas*) extracts was shown 44.09%, 36.83%, and 52.63% at 1000 ㎍/㎖ concentration.

**Key words** : Buffalo-weed*, Ambrosia trifida L.*, daisy fleabane, *Erigeron annuus*, *Humulus japonicus*, naturalized, disturb, antioxidant

[한글 번역본]

한국 귀화식물 추출물의 항산화 효과

단풍잎돼지풀(Buffalo-Weed;*Ambrosia trifida* L.)과 개망초(Daisy fleabane; *Erigeron annuus*)는 북아메리카 원산의 귀화식물이며, 삼과 식물인 환삼덩굴(*Humulus japonicus*)은 생태계 교란 식물로 동아시아 지역에 널리 분포하고 있다. 이 식물들은 높은 번식력과 토착생물의 성장을 억제하는 능력을 통하여 한국의 생태계를 교란하고 있으며, 단풍잎돼지풀의 꽃가루는 알레르기성 질병을 일으킨다. 귀화식물을 제거하기 위한 방법 중 하나로 이들의 사용처를 만들기 위하여 귀화식물의 항산화 능력을 검증하였다. 단풍잎돼지풀, 개망초, 환삼덩굴을 70% ethanol로 추출한 후 각 추출물의 전자공여능, ABTS radical 소거능, SOD 유사활성을 측정하였다. 전자공여능 측정 결과 단풍잎돼지풀, 개망초, 환삼덩굴 추출물의 전자공여능은 1000 ㎍/㎖에서 76.08%, 91.56%, 52.32%로 나타났다. 단풍잎돼지풀, 개망초, 환삼덩굴 추출물의 ABTS radical 소거능은 1000 ㎍/㎖ 농도에서 각각 95.12%, 98.66%, 99.42%이었다. SOD 유사활성 측정 결과 단풍잎돼지풀, 개망초, 환삼덩굴 추출물의 SOD 유사활성은1000 ㎍/㎖ 농도에서 각각 44.09%, 36.83%, 52.63%로 나타났다.