

# ALLELOPATHIC POTENTIAL OF *BRASSICA JUNCEA* (L.) CZERN. VAR. ENSABI AS ANATURAL HERBICIDE

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**ABSTRACT.** The wild brassica (*Brassica juncea* (L.) Czern. var. Ensabi) with its pungent and slightly bitter aromatic taste has been domesticated as a local vegetable and planted between rows in hill paddy by Malays and natives in the Malaysian states of Sabah and Sarawak. Laboratory experiments were conducted to assess the allelopathic potential of *Brassica juncea* (L.) Czern var. Ensabi extracts as a natural herbicide. The aqueous extracts of fresh and dried leaves, stems and roots were prepared, with deionized distilled water as a control. Seeds of barnyardgrass (*Echinochloa crus-galli* L. Beauv.) and radish (*Raphanus sativus* L.) were exposed to these extracts, and the ensuing seed germination and seedling growth were recorded. The extracts from dried leaves of Ensabi exhibited the highest suppression of seed germination and seedling growth of *E. crus-galli* and *R. sativus*. Aqueous extracts of the dried leaves, stems and roots of Ensabi, each at 300g L<sup>-1</sup> strongly inhibited germination of barnyardgrass and radish seeds. Highly significant deleterious growth effects were registered on seed germination, dry weights and lengths of radicle and hypocotyls of barnyardgrass and radish seedlings when exposed to aqueous extracts of dried Ensabi leaves, stems and roots, each at 300g L<sup>-1</sup>. Measurable concentration-mediated reductions in seed germination, radical and shoot lengths of radish and barnyardgrass were registered with increasing concentration of aqueous extracts of dried and fresh Ensabi. The potentials of Ensabi extracts as a component of the cultural management of weeds in hill paddy are discussed.

**Keywords:** Allelopathy, *Brassica juncea*, *Echinochloa crus-galli*, *Raphanus sativus* seed germination, seedling growth.