

عنوان مقاله:

(Seed Dormancy in Cereal Weed *Adonis flammea* Jacq. (Ranunculaceae)

محل انتشار:

مجله علوم و فناوری کشاورزی، دوره 20، شماره 1 (سال: 1396)

تعداد صفحات اصل مقاله: 12

نویسنده:

J. Kolodziejek - Department of Geobotany and Plant Ecology, Faculty of Biology and Environmental Protection,
University of Łódź, Banacha 12/16, 90-237 Łódź, Poland

خلاصه مقاله:

In some European countries, *Adonis flammea* is very rare and endangered primarily due to increasing fertilizer and herbicide use, more efficient seed cleaning, and strong soil acidification. The aims of this study were to determine the requirements for embryo growth, dormancy break, and seed germination to characterize the type of seed dormancy (via effects of GA³) and to evaluate the effects of light on germination ability. Germination responses of *A. flammea* were tested in light and dark conditions at three alternating temperatures (15/5°C, 20/10°C, 25/15°C) after stratification. Embryo growth was determined by measuring its lengths. Fresh seeds did not germinate during one month of incubation in either light or darkness over a range of temperatures. Seeds of *A. flammea* had underdeveloped embryos that must grow from about 0.2 to 1.5 mm in length before radicle emergence (germination); thus they had Morphological Dormancy (MD). In addition to MD, the seeds also had Physiological Dormancy (PD) at maturity in mid-July; moreover, the embryos grew during warm stratification, and the seeds needed a subsequent period of cold stratification to germinate. Thus, MD had been broken, but PD prevented germination. Therefore, the seeds have morpho-physiological dormancy. Germination was promoted by 12 weeks of warm stratification followed by 12 weeks of cold stratification. In conclusion, good conservation management in arable land for *A. flammea* involves annual .cultivation, ideally in mid-summer (warm stratification) without subsequent disturbance until the following summer

کلمات کلیدی:

Embryo length, Gibberellic acid, Morpho-physiological seed dormancy

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