

DOES ALLIUM VINEALE L. PRODUCE SEEDS IN INDIANA.¹

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Whether or not wild garlic, *Allium vineale* L., produces seeds under Indiana conditions is a mooted question the answer to which is of economic importance inasmuch as wild garlic is the most damaging of weeds in southern Indiana and data regarding methods of propagation are of the utmost importance. The damage attributable to wild garlic may be measured by the fact that a survey conducted in Vanderburgh, Perry, Warrick, Dubois, Spencer, Gibson, Pike and Posey counties during 1922 by the Purdue University Agricultural Extension Department, re-



Fig. 1. Heads of *Allium vineale* showing flowers arising from between the aerial bulblets. It was from these flowers that seeds were secured.

vealed that during 1921 a total of 1,132,166 bushels of garlicky wheat and 40,130 gallons of garlicky cream were marketed from the area covered by these eight counties in which a total of 463,594 acres of cultivated land is infested with this serious weed.

The ordinary method by which wild garlic reproduces is by means of aerial and subterranean bulblets. In common with many species that possess vigorous means of vegetative reproduction, seeds are rarely formed, although no record can be found containing definite data on the subject. Perhaps the most exhaustive treatise on the biology of *Allium vineale* in Indiana is the work of Pipal who states² "propagation of wild garlic by seed takes place mostly in the southern limits of its range.

¹ Contribution from the Botany Department (Extension Division), Purdue University Agricultural Experiment Station.

² Pipal, F. J. "Wild Garlic and Its Eradication." Bul. 176, Purdue University Agricultural Experiment Station, 1914, p. 11.

No plant has been found, so far as known to the writer, producing seed in Indiana." On the other hand, Watts states that under Tennessee conditions each garlic head usually contains about six flowers each of which produces from three to six seeds, and nearly 100 per cent of the seeds are viable and produce mature plants the season following their formation.³

On November 20, 1922, the writer found a number of wild garlic plants in Dubois County, Indiana, that were conspicuous on account of the clusters of flowers formed on each head (fig. 1). An examination of the flowers revealed the presence of seeds, most of which were somewhat shriveled although a number of them were plump and appeared to be viable. A dozen of these heads were collected from which slightly over two hundred seeds were secured.

The seeds were separated into two lots of one hundred each. One lot was tested for germination by the writer, using moistened blotters at ordinary room temperature for the purpose, while the other lot was sent to the Seed Laboratory of the Purdue University Agricultural Experiment Station. Germination tests were conducted for periods of thirty and thirteen days and in neither case did a single seed germinate.

These data suggest that the production of seeds by *Allium vineale* L. under Indiana conditions is very unusual while the formation of viable seeds either does not occur or is rare.

RECENT INDIANA WEEDS, 1923.¹

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This paper attempts to record the occurrence in Indiana of plants known to have pronounced weedy characteristics and which are new in the state or else have recently developed troublesome tendencies. The present paper is a continuation of the record started in the "Proceedings of the Thirty-eighth Meeting (1922) of the Indiana Academy of Science". It covers the period from October 1, 1922, to October 1, 1923.

For assistance in verifying identifications thanks are due Dr. B. L. Robinson, of the Gray Herbarium, Dr. John K. Small, of the New York Botanical Garden and Dr. S. F. Blake of the United States Department of Agriculture. Specimens of the plants listed have been deposited in the herbarium of the Purdue University Agricultural Experiment Station.

Fanweed.—*Thlaspi arvense* L. This is one of the most feared of grainfield weeds in Minnesota, North and South Dakota, Colorado and throughout the grain-growing sections of western United States and Canada. Fanweed is a European annual that is noted for its prolific seed production and is the subject of several western experiment station bulletins.

³ Watts, R. L. "The Wild Onion." Tenn. Agr. Exp. Sta. Bul., Vol. VII, No. 2, 1895, p. 31.

¹ Contribution from the Botanical Department (Extension Division) of the Purdue University Agricultural Experiment Station.