Both economic and environmental challenges in the world are increasing interest in multi-cropping system. Therefore, field experiment was carried at Experimental Station of Vytautas Magnus University Agriculture Academy in 2017–2019. The aim of the study was to determine and compare weed spread in the sole (spring barley, spring wheat, pea, caraway), binary (spring barley-caraway, spring wheat-caraway, pea-caraway) and trinary (spring barley-caraway-white clover, spring wheat-caraway-white clover, pea-caraway-white clover) crops. In the crops the most common weeds were *Tripleurospermum perforatum*, *Chenopodium album* and *Sinapis arvensis*. In the second and third years of caraway cultivation, the abundance of perennial weeds in crops increased. In the first year, during main crops cultivation, significantly from 3.0 to 31.6 times higher dry matter mass of weeds was determined in non-sprayed with herbicides binary crops with under sown caraway and in trinary crops with under sown caraway and white clover, compared to sole crops. In the second year, significantly 6.9 and 6.6 times higher dry matter mass of weeds was found in the caraway binary crops, when they were grown after spring barley and spring wheat without white clover, compared to sole crops. In the third year, significantly from 2.7 to 7.4 times higher dry matter mass of weeds was obtained in the caraway binary and trinary crops, when they were grown after barley, wheat and pea without white clover and after barley and wheat with white clover, compared to sole crops. This was due to the intense spread of *T. perforatum* and *Taraxacum officinale* in the binary and trinary crops. In the second year, the highest yield of caraway seeds were formed, when they were grown as binary crop after pea without white clover, in the third year – when they were grown as trinary crop after wheat with white clover.

**Key words:** carum carvi, multi-cropping system, seed yield, weed.