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Microhabitat effect on spider distribution in winter wheat agroecosystem (Araneae)

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Abstract: The study was carried out in Moscow Area (central European part of Russia) in a winter wheat field and its grassy margins. A total of 151 spider species from 17 families and 89 genera were collected. In croplands, the families Linyphiidae, Tetragnathidae, Araneidae and Thomisidae were dominant among hortobiontous spiders, while Lycosidae, Linyphiidae and Tetragnathidae were dominant among epigeic ones. In the margins, Linyphiidae, Tetragnathidae and Araneidae prevailed among hortobiontous spiders, while Lycosidae and Linyphiidae prevailed among herpetobiontous spiders. The abiotic (soil acidity, soil moisture, organic matter content) and biotic (wheat ear height, weed abundance, plant biomass) factors studied have a different influence on the distribution of different spider groups. Their effect is diminished in the field margins. The distribution of most hortobiont web-building spiders depended on the characteristics of crop vegetation cover, as they preferred weeds. Hortobiont hunting spiders (crab spiders) were more sensitive to microclimate and preferred dry microhabitats. Herpetobiont spiders did not respond to soil characteristics in the field. The patterns of spider aggregation should be taken into account while carrying out ecological monitoring.

Key words: agrocoenoses, spider aggregation, spatial distribution, Russia