

# 农田杂草生态位研究的意义及方法探讨

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**摘要** 农田除草剂长期单一使用引起杂草种群的演变,增加了化学除草难度。预测除草剂作用下农田杂草群落的演变是当前迫切要求解决的问题。研究农田杂草生态位,揭示杂草种间生态相似关系,结合杂草对除草剂敏感性资料,能够预测这种演变。本文以浙中油菜田为例,对该地区油菜田24种主要杂草的发生进行了七级目测,计测了它们的生态位宽度和生态位重叠值,以生态位重叠值为指标,用极点排序和图论聚类分析中的最小生成树法,作出了反映杂草生态学相似关系的排序图和最小生成树。结果表明,看麦娘(*Alopecurus aequalis*)、牛繁缕(*Malachium aquaticum*)、雀舌草(*Stellaria alsine*)、一年蓬(*Erigeron annuus*)、春蓼(*Polygonum persicaria*)、野燕麦(*Avena fatua*)、猪殃殃(*Galium aparine* var. *tenerum*)等杂草的实际生态位较宽,它们是本地区油菜田的主要杂草;猪殃殃、波斯婆婆纳、野燕麦等杂草间,看麦娘与牛繁缕、雀舌草、水苦苣(*Veronica undulata*)、棒头草(*Polypogon fugax*)等杂草间的生态位重叠值较大。

**关键词:** 油菜田,生态位,杂草,最小生成树,排序。

## SIGNIFICANCE AND METHOD OF STUDIES ON WEED NICHE IN CROP FIELDS

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**Abstract** Long-term application of a certain herbicide let a variation of weed populations in crop fields. It increases the difficulty controlling weeds effectively. Therefore, it is a hot problem for us to solve. Studies on the niche of weeds in crop fields can reveal the ecological demand similarity of different weeds. It can be applied to predict the change trend of crop-weed community on the basis of the references about the sensitivity of various weeds to the herbicide applied. In this paper, the rape fields of Middle Zhejiang were exemplified. In the rape fields in this area, 27 sites under different ecological conditions were surveyed in detail with seven scales by visualization of weed dominance to rape to obtain the important value of 24 main weeds. The species niche breadth and niche overlap were then calculated on the basis of the data above. The minimal spanning tree and a two-dimensional scatter plot of polar ordination revealing weed ecological similarity were drawn based on the niche overlap. The results show that *Alopecurus aequalis*, *Malachium aquaticum*, *Stellaria*

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