

## 冬油菜叶片的物质及养分积累与转移特性研究

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The characteristic of dry matter and nutrient accumulation and transportation in leaves in winter oilseedrape (*Brassica napus* L.)

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摘要

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**摘要** 为优化当季和下季作物的养分管理, 采用田间试验研究了冬油菜品种: 华双5号与中油杂12号叶片的干物质及氮、磷、钾的积累及转移规律, 并比较了品种间的异同。结果表明, 两个油菜品种的绿叶干物质质量在苗后期基本达最大值, 花后期迅速降低; 苗期的落叶干物质质量较小, 蕾薹期后直线增加; 叶片总干物质先增后减, 花期达最大值。中油杂12号的落叶及叶片总干物质均高于华双5号, 差异随生育期的推进逐渐明显。绿叶氮含量出苗后逐渐降低, 后因越冬肥的施用又略有升高, 蕾薹期后便迅速下降; 落叶氮含量持续降低, 苗后期降至最低点, 其后一直保持稳定。绿叶磷含量在苗期缓慢增加, 蕾薹期达到最大值, 而后迅速下降; 苗期落叶的磷含量逐渐降低, 蕾薹期降至最低值, 角果期后又略有升高。出苗50d后绿叶钾含量快速下降, 70d达到最低值, 其后保持稳定; 落叶钾含量在蕾薹期达到最低值, 其后波动较大。两品种叶片养分含量的变化趋势相似, 但无论绿叶还是落叶, 华双5号的养分含量总体略低于中油杂12号。绿叶的养分与叶片总养分积累的变化规律一致, 即氮、磷、钾积累量均先增加后降低, 分别在蕾薹期、苗后期和花期达到最高值。落叶的养分积累量在抽薹后迅速增加, 收获期达最大值。华双5号叶片的干物质、N、P2O5、K2O转移率分别为25.5%、82.9%、75.4%、45.8%; 中油杂12号则分别为8.4%、76.0%、60.2%、38.8%, 品种间差异显著。

**关键词:** 油菜 落叶 养分积累量 养分管理

**Abstract:** Leaf is the main photosynthetic organ for plants, but for rapeseed, it gradually drops out after the bud period. To increase nutrient use efficiency, it is important to evaluate the nutrient accumulation and distribution in green leaves and defoliation. Two cultivars of rapeseed (*Brassica napus* L., HS No.5 and ZYZ No.12) were selected to study the accumulation and transportation of dry matter and nutrients in leaves of rapeseed. The results show that the accumulation amounts of dry matter in green leaves of the two cultivars reach their maximum values at the late seedling period and are decreased quickly after the blooming period, while the dry matter accumulation of defoliation is increased quickly after the bud period. The dry matter accumulation amounts of total leaves are increased at first and then decreased, and reach their maxima at the blooming period. The dry matter accumulation of total leaves and defoliation of ZYZ No.12 are more than those of HS No.5, and the differences are significant along with the growth of rapeseed. The N content of green leaves is decreased at the seedling period and then increased because of the application of wintering fertilizer, and decreased again after the bud period. The N content of defoliation is decreased gradually at the seedling period and keeps steady after the bud period. The P content of green leaves is increased slowly at the seedling period and decreased quickly after the bud period. The P content of defoliation is decreased at the seedling period and reaches the minimum at the bud period, but at the mature period it is increased a little. The K content of green leaves decreased quickly at 50 d after seeding, reaches the minimum at 70 d, and then keeps steady. The K content of defoliation reaches the minimum at the bud period and then fluctuates greatly. The changes of nutrient concentrations are similar for the two varieties, and the contents of nutrients of HS No.5 are slightly lower than those of ZYZ No.12 both in green leaves and defoliation. The accumulation amounts of N, P2O5 and K2O reach their maxima at the bud period, seedling period and blooming period respectively in both green leaves and total leaves and then were decreased after those period. Nutrient accumulations of defoliation are increased after the bud period and reach their maxima at harvest. The transportation ratios of dry matter, N, P2O5 and K2O in rapeseed leaves are 25.5%, 82.9%, 75.4% and 45.8% in HS

**Keywords:** oilseed rape defoliation nutrient accumulation nutrient management

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