

研究简报

河西干旱区酿酒葡萄生长的气象条件

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摘要 按照平行观测的原则, 利用2002、2003年两年田间试验资料, 采用数理统计方法分析了河西内陆干旱区目前国内广泛种植的8个不同熟性酿酒品种的生长发育规律及其气象影响因子。结果表明: (1) 新梢、果实生长呈抛物线型, 生长关键期分别出现在5月上旬~6月中旬、7月上旬~8月上旬; 糖分累积呈“S”型, 积累关键期出现在8月中旬~9月上旬。枝条、果实、含糖量增长峰值点相出现时间按中早熟、中晚熟、晚熟品种依次推后。(2) 中早熟品种需 $\geq 10^{\circ}\text{C}$ 积温2800~2900 $^{\circ}\text{C}$, 中晚熟种2900~3100 $^{\circ}\text{C}$, 晚熟种3000~3200 $^{\circ}\text{C}$; 新梢生长期35~50d, 需 $\geq 10^{\circ}\text{C}$ 积温620~750 $^{\circ}\text{C}$ 。花期7~15d, 需 $\geq 10^{\circ}\text{C}$ 积温130~320 $^{\circ}\text{C}$ 。浆果生长期50~65d, 需 $\geq 10^{\circ}\text{C}$ 积温1100~1400 $^{\circ}\text{C}$ 。浆果成熟期35~50d, 需 $\geq 10^{\circ}\text{C}$ 积温640~940 $^{\circ}\text{C}$ 。(3) 新梢生长量与日平均气温、日照时间和土壤湿度呈正相关。气温低于11~12 $^{\circ}\text{C}$ 时, 新梢停止生长; 果粒增长速度与平均气温、最高气温呈负相关, 与相对湿度、降水量呈正相关。果粒增长适宜气温为20~21 $^{\circ}\text{C}$, 超过21 $^{\circ}\text{C}$, 增速明显变缓; 含糖量积累与光、热因子均呈正相关, 与水分因子呈负相关。品种熟性越晚, 对气象条件反映越敏感。气温低于7~7.9 $^{\circ}\text{C}$ 时, 糖分停止积累。通过酿酒葡萄适生气候条件分析, 为区域化布局、产业化发展提供理论依据。

关键词 [河西走廊](#); [酿酒葡萄](#); [气象条件](#); [干旱区](#)

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Meteorological conditions for wine grape growth in Hexi Arid Region

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Abstract With the field observation data from 2002 to 2003, following the parallel observation concept, the growth rule of 8 different maturing variety of wine grapes over inland Hexi corridor, Gansu province, China and related meteorological factors are discussed using mathematic statistical method. The results show that:

(1)The growth process of new tip and fruitage is parabola type with key growth periods from early May to mid-June and from early July to early August. The sugar content accumulating is "S" type with key period from mid-August to early September. The peak growth value of branches, fruit age and sugar concentration occurs sequentially with the mid-early-maturing type, followed by mid-late-maturing type and then late-maturing type .

(2)For the mid-early-maturing, the mid-late-maturing and the late-maturing types, accumulated temperatures($\geq 10^{\circ}\text{C}$) needed are 2800-2900 $^{\circ}\text{C}$, 2900-3100 $^{\circ}\text{C}$ and 3000-3200 $^{\circ}\text{C}$ respectively. The accumulated temperatures for different growth periods are as following ($\geq 10^{\circ}\text{C}$): new tips 35~50d, 620-750 $^{\circ}\text{C}$, florescence 7-15d, 130-320 $^{\circ}\text{C}$, berry 50-65d, 1100-1400 $^{\circ}\text{C}$ and mature 35-50d, 640-940 $^{\circ}\text{C}$.

(3)Positive correlations are found between the new tip growth rate and daily average temperature

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e, sunlight duration and soil humidity. The fruit grain growth rate is positively correlated with relative humidity and precipitation, but reversely correlated with average temperature and maximum temperature. The sugar content accumulating is positively correlated with sunlight duration and heat factors, but reversely with humidity factors. The proper temperature for fruit grain is 20-21 °C with growth rate slowed down obviously when it is over 21 °C. The new tips stop growing when it is lower than 11-12 °C. And when it is lower than 7-7.9 °C, the sugar content stop accumulating. The later the maturing type, the more sensitive it is to meteorological factors.

The impact of climatic conditions on wine grape growth is intended to benefit regional overall planning and industrialized farming.

Key words _ Hexi corridor _ wine grape _ meteorological condition _ arid regions

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