


生物策略表

類別	生物策略 (Strategy)
生物策略 STRATEGY	種子鑽入土壤 (Seeds drilled into soil)
生物系統 LIVING SYSTEM	硬粒小麥 <i>Triticum turgidum</i> (Wild wheat)
功能類別 FUNCTIONS	#在固體上/中移動 #Move in/on solids
作用機制標題	野生小麥透過吸收濕氣使卷曲的芒刺解開，讓種子鑽入土壤 (The awn of wild wheat grass drills the seed into the soil by absorbing moisture, causing the awn to unwind.)
生物系統/作用機制 示意圖	
作用機制摘要說明 (SUMMARY OF FUNCTIONING MECHANISMS)	
文獻引用 (REFERENCES)	
<p>「野生圓錐小麥 [<i>Triticum turgidum</i>] 的種子傳播單位 (dispersal unit) 含有兩根顯眼的芒刺 (awn)，能夠在掉落時保持裝置的平衡。我們發現這些芒刺同時亦能在地面上推動種子或將種子推入泥土中。纖維素纖絲 (cellulose fibrils) 的排列使芒刺能隨著濕度而彎曲。包覆著芒刺的矽化毛茸 (silicified hair)，使單位裝置只能向種子的方向推進。這意味著已經死亡的組織有著類似馬達一樣的作用。受到日夜的濕度循環所推動，芒刺引發了種子傳播所需要的動力。」 (Elbaum et al. 2007: 884)</p> <p>“The dispersal unit of wild wheat [<i>Triticum turgidum</i>] bears two pronounced awns that balance the unit as it falls. We discovered that the awns are also able to propel the seeds on and into the ground. The arrangement of cellulose fibrils causes bending of the awns with changes in humidity. Silicified hairs that cover the awns allow propulsion of the unit only in the direction of the seeds. This suggests that the dead tissue is analogous to a motor. Fueled by the daily humidity cycle, the awns induce the motility required for seed dispersal.” (Elbaum et al. 2007: 884)</p>	

參考文獻清單與連結 (REFERENCE LIST)

Elbaum1, R., L. Zaltzman, I. Burgert, and P. Fratzl. (2007). The role of wheat awns in the seed dispersal unit. *Science* 316: 884-886. (<https://science.sciencemag.org/content/316/5826/884>)

延伸閱讀

<https://www.smithsonianmag.com/videos/category/science/crawling-crop/>
<https://www.youtube.com/watch?v=0yEZKKIVH0>

生物系統延伸資訊連結 (LEARN MORE ABOUT THE LIVING SYSTEM/S)

https://en.wikipedia.org/wiki/triticum_turgidum
https://www.onezoom.org/life/@triticum_turgidum
<https://eol.org/pages/1115241>

撰寫/翻譯/編修者與日期

譚國銜翻譯 (2020/08/26)；許秋容編修 (2021/04/03)

AskNature 原文連結

<https://asknature.org/strategy/seeds-drilled-into-soil/>