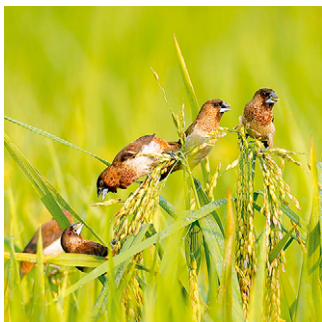


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ON THE COVER



Common wild rice (*Oryza rufipogon*), the wild relative of Asian cultivated rice (*Oryza sativa*), typically bears long, barbed awns, which aid in seed dispersal and deter bird predation. By contrast, *O. sativa* cultivars have either no awns or short and barbless awns, which facilitate seed processing and storage and suffer from significant bird predation. Hua et al. (pages 1875–1888) characterized the genetic variation and evolutionary mechanism underlying the transition from the long, barbed awns in wild rice to the short, barbless awns in cultivated rice, providing new insights into rice domestication. The image by Linguo Ye depicts the awnless cultivated rice being pecked by white-rumped munias.

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- LABA1, a Domestication Gene Associated with Long, Barbed
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- SWP73 Subunits of Arabidopsis SWI/SNF Chromatin
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- Nicotinate O-Glucosylation Is an Evolutionarily Metabolic
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- Aquaporins Contribute to ABA-Triggered Stomatal Closure
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- Cell-Type-Specific Cytokinin Distribution within the
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- Mitochondrial Dihydrolipoyl Dehydrogenase Activity Shapes
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Stefan Timm, Maria Wittmiß, Sabine Gamlien, Ralph Ewald,
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- GAP Activity, but Not Subcellular Targeting, Is Required for Arabidopsis
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- Arabidopsis MAS2, an Essential Gene That Encodes a
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CORRECTIONS

Lampard, G.R., Wengier, D.L., and Bergmann, D.C. (2014). Manipulation of mitogen-activated protein kinase kinase signaling in the *Arabidopsis* stomatal lineage reveals motifs that contribute to protein localization and signaling specificity. *Plant Cell* 26: 3358–3371. 2073

Possart, A., and Hiltbrunner, A. (2013). An evolutionarily conserved signaling mechanism mediates far-red light responses in land plants. *Plant Cell* 25: 102–114. 2075

Sato, H., Mizoi, J., Tanaka, H., Maruyama, K., Qin, F., Osakabe, Y., Morimoto, K., Ohori, T., Kusakabe, K., Nagata, M., Shinozaki, K., and Yamaguchi-Shinozaki, K. (2014). *Arabidopsis* DPB3-1, a DREB2A interactor, specifically enhances heat stress-induced gene expression by forming a heat stress-specific transcriptional complex with NF-Y subunits. *Plant Cell* 26: 4954–4973. 2076

Ruiz, M.T., Voinnet, O., and Baulcombe, D.C. (1998). Initiation and maintenance of virus-induced gene silencing. *Plant Cell* 10: 937–946. 2078

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