

# 種間交雑を利用して作出した株出し多収なサトウキビ新品種「はるのおうぎ」

Harunoogi, a high ratoon yield sugarcane cultivar developed by interspecific hybridization between sugarcane and *Saccharum spontaneum*

サトウキビ (*Saccharum* spp. hybrid) は世界の食料・エネルギー生産などにとって重要な作物であるが、生産性や不良環境適応性の更なる改良に向けて、これまで利用できなかった新しい遺伝資源の利用が必要となっている。そこで、サトウキビ野生種 (*S. spontaneum*) との種間交雑を利用することで、低温下でも株出し多収となるサトウキビ品種「はるのおうぎ」を育成した(図1、2)。「はるのおうぎ」は、普及品種「NiF8」と同程度の糖含有率であり、萌芽が旺盛で、株出し栽培において、普及品種「NiF8」と比べて茎数が極めて多い(表1、図3)。そのため、春植え、株出しの両作型で原料茎重と可製糖量が「NiF8」より多い(表1)。「はるのおうぎ」の利用により、低温が生産上の課題となる高緯度サトウキビ生産地域における生産性向上が期待される。

Sugarcane (*Saccharum* spp. hybrid) is an essential crop for food and energy production in the world. For further improvement of sugarcane, we carried out interspecific crossing between sugarcane and wild sugarcane (*S. spontaneum*), and developed the high ratoon yield cultivar Harunoogi (Figs. 1 & 2). Harunoogi produces an extraordinarily large number of stalks with sugar content comparable to that of commercial cultivar NiF8. In addition, cane yield and sugar yield in ratoon crop are much higher than in NiF8 (Table 1, Fig. 3). Harunoogi is expected to contribute to sugarcane production in high-latitude areas in Japan where low temperature is a constraint in production.

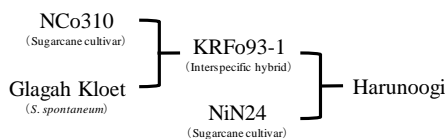


図2 「はるのおうぎ」の系譜  
Fig. 2. The pedigree of Harunoogi

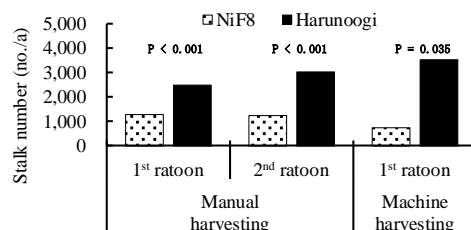


図3 「はるのおうぎ」の萌芽茎数  
Fig. 3. Stalk number in early growth stage of the ratoon crop  
The P-values were calculated by a generalized linear model with cultivar (fixed effect) and plot (random effect).

図1 「はるのおうぎ」の草姿  
Fig. 1. Harunoogi and NiF8

表1 「はるのおうぎ」の主要農業特性  
Table 1. The agronomic characteristics of Harunoogi

Cropping type	Cultivar	Stalk number (no./ha)	Stalk length (cm)	Stalk diameter (mm)	Single stalk weight (g)	Cane yield (t/ha)	Sugar content (%)	Sugar yield (t/ha)
New planting	Harunoogi	143,950	224	20.6	685	97.3	12.4	11.0
	NiF8	93,100	244	22.5	818	75.6	12.1	8.4
	p-value	<0.001	<0.001	<0.001	<0.001	<0.001	0.441	<0.001
1 <sup>st</sup> ratoon	Harunoogi	188,667	244	19.4	619	117.2	11.8	12.7
	NiF8	110,633	238	20.5	649	71.9	12.4	8.2
	p-value	<0.001	0.272	0.016	0.337	<0.001	0.098	<0.001
2 <sup>nd</sup> ratoon	Harunoogi	192,950	218	19.6	583	109.7	10.4	9.8
	NiF8	134,800	215	20.5	558	74.6	10.4	6.7
	p-value	0.003	0.733	0.116	0.492	<0.001	0.723	0.003

The experiments were conducted from 2015 to 2018 at Kyushu Okinawa Agricultural Research Center, Tanegashima Sugarcane Breeding Site, Nishinoomote, Japan. The results in the table show the means of 4 years (2015-2018) in new planting, three years (2016-2018) in 1st ratoon, and two years (2017-2018) in 2nd ratoon. The p-values were calculated by a generalized linear model with cultivar (fixed effect), year, and plot (random effect).