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Varietal Variation of Amylogram Properties in the Recombinant Inbred Lines of Milyang23×Gihobyeo Based on the Days from Seeding to Heading.

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Objectives

The main purpose of this experiment is to get the basic information regarding the amylogram properties such as gelatinization temperature peak viscosity, hot viscosity, cool viscosty break down, pasting consistency and set back based on the varietal groups classified by the days from seeding to heading.

Material and Methods

○ Materials : 164 Recombinant inbred lines from Milyang23×Gihobyeo

○ Methods

- Seeding : April 5. 2005
- Transplanting : May 15. 2005
- Fertilizer level : 12-9-11kg/10a(50% basal, 25% at tillering stage, 25% at panicle initiation stage)
- Characters for investigation : Heading date, Amylogram properities (Rapid Visco Analyser)

Results and Discussion

The recombinant inbred line of Milyang 23 and Gihohyeo could be grouped into 4 varietal groups such as early, medium, mid-late and late groups based on the days from seeding to heading. The gelatinization temperature, consistency and set back revealed a regular tendency by the varietal groups classified by the days from seeding to heading in the M/G RIL materials.

The cool viscosity is highly positive correlated with peak viscosity and hot viscosity at the both early and late varietal groups.

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Table 1 Varietal groups classified by the days from seeding to heading of 164 recombinant inbred lines between Milyang23 and Gihobyeo

Materials	Days from seeding to heading	No , of lines	Remarks
Milyang23	116	10 plants	Female
Gihobyeo	118	10 plants	Male
M/G RILs	<100(98±1.89)	11	Early group
	101~110(105±2.95)	89	Medium group
	111~120(115±2.84)	52	Mid-late group
	>121(126±7.02)	12	Late group

Table 2 Varietal group variation of amylogram properties amylose content and protein content classified by the days from seeding to heading in M/G RILs

Materials	Gelatinization temperature	Peak Viscosity	Hot Viscosity	Cool Viscosity	Breakdown	Cosistency	Set Back
Milyang23	70.4	298	214	347	84	133	49
Gihobyeo	69.7	254	189	325	65	136	71
Early group	73.7	241	157	283	84	126	42
Medium group	74.9	243	156	290	87	134	47
Mid-late group	78.2	253	164	309	89	144	55
Late group	79.5	231	145	292	87	147	61

Table 3 Correlations of heading date and amylogram properties by the varietal groups classified by the days from seeding to heading in the M/G RILs

	Heading date	G.T	P.V	H.V	C.V	B.D	C.S	S.B
Heading date		0.058	-0.467	-0.529	-0.421	0.048	-0.020	-0.048
G.T	0.246		-0.212	-0.094	0.034	-0.431	0.321	0.559
P.V	-0.573	-0.583*		0.957**	0.923**	0.441	0.515	0.157
H.V	-0.379	-0.425	0.918**		0.958**	0.161	0.517	0.342
C.V	-0.404	-0.271	0.753**	0.870**		0.177	0.741**	0.524
B.D	-0.681*	-0.641*	0.848**	0.568	0.399		0.153	-0.521
C.S	-0.270	0.044	0.224	0.339	0.759**	0.012		0.764**
S.B	0.287	0.484	-0.438	-0.158	0.262	-0.698*	0.708**	

Upper: early group (<100)

Lower: late group (>121)