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Breeding of Potato Variety for French Fry Processing: Evaluation of Parental Traits

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[Introduction]
Domestic potato breeding have been conducting to select good agronomic character, resistance of disease, such as late blight and common scab, and table potato and chip processing. So, shape of domestic potato varieties was most round or oval, flesh colour was white or cream. Potatoes for french fry processing need traits that were high dry matter content and long shape. In 1988, 'Sepung(Shepody)' was introduced for french fry processing in Korea. But, 'Shepody' have susceptibility of disease and it is rarely cultivated now. Consequently, french fry products have been mainly importing from other country. The aim of this study were that we make potato variety for french fry processing with long type shape, good agricultural and processing traits for to diversify domestic potato varieties and develop the potato processing industry.

[Materials and Methods]
Cross parents of potato were cultivated and crossed with each other in green house in Daegwallyeong. parents were planted in April 2019. Pollen of parents were collected and crossed each other. True fruits that are the result of cross were harvested in August 2019. We investigated parental tuber traits such as potato shape, flesh and skin colour and french fry quality and true seed yield by crossing combination.

[Results and Discussion]
We used crossing parents 'Norking russet', 'Hokkai kogane', 'Lamoka', 'Sebong', '2048'. Skin of 'Norking russet' is russet type, another other were brown or light brown. Flesh colour of varieties except 'Hokkai kogane' were white or cream, 'Hokkai kogane' was light yellow. 'Norking russet' have known resistance of verticillium wilt and common scab. 'Sebong' is variety which bred in Korea have resistance of virus and high dry matter content for processing. We harvested true potato fruits in 6 cross combinations and acquired average 710 true seeds. We will plant true seeds at pots in December to evaluate yield and shape, tuber uniform of progenies

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