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**Project Title:** Development of 2-rowed FHB Resistance Germplasm and Cultivars

### PROJECT 1 ABSTRACT

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FHB is becoming a problem in Idaho state that was not a problem before. Recently there are some cases that growers' malting barley was rejected by the malting company due to the high FHB infection and DON content in Idaho. It is an essential that the barley cultivars in future must have some resistance to FHB to secure the high barley supply chain in west region. Adding FHB resistance data into the germplasm profile and barley breeding program would be essential for cultivar development for FHB resistance in the west region. It is also a great contribution to national wide barley breeding programs for FHB resistance. Preliminary data showed that Aberdeen barley breeding materials carry some resistance to FHB and lower DON content. Particularly some elite lines such one of our AMBA plant scale test lines showed lower DON so far. We have made some crosses using the lines with FHB resistance and lower DON. The breeding selection for FHB resistance and lower DON requires enough data from nursery evaluations. Therefore, the breeding approach will be used via extensive collaborations to maximize FHB evaluation efficiency by accessing total four FHB screening nurseries in Idaho, North Dakota, and Minnesota. Total 600 lines will be evaluated in the nurseries each year and 50 crosses will be made with at least one FHB resistance parent. More data generated for FHB resistance and DON phenotypes on Aberdeen barley germplasm lines will be accessible to other researchers. The FHB resistance or lower DON elite lines or varieties developed will be available for barley growers or other research groups.