

**PI: Patrick Hayes**

**PI's E-mail: [patrick.m.hayes@oregonstate.edu](mailto:patrick.m.hayes@oregonstate.edu)**

**Project ID: FY17-BA-013**

**ARS Agreement #: New**

**Research Category: BAR-CP**

**Duration of Award: 1 Year**

**Project Title: Collaborative Doubled Haploid Production for FHB Resistance Breeding.**

### **PROJECT 1 ABSTRACT**

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Our overall goal is to increase the efficiency with which researchers identify and deploy genes and QTLs that contribute to reduction in the losses caused by Fusarium head blight (FHB), especially quality discounts due to the accumulation of mycotoxins such as deoxynivalenol (DON). This can be achieved by developing doubled haploid germplasm from the F1s of cross combinations identified by collaborating breeders. Doubled haploids - being complete homozygotes – are immortal reference stocks that provide unequivocal genotyping and phenotyping data. F1 seed will be received at OSU – no later than Sep. 1 if spring growth habit and no later than August 1 if winter habit - from the collaborating research group(s) identified by the review committee as having the greatest potential to have economic impact and to contribute to the fundamental body of knowledge. Doubled haploids are produced via anther culture. Collaborators provide F1 seed from target crosses. Doubled haploids are produced from these F1 donors. In this proposal, we propose to provide participants with *in vitro* doubled haploid plantlets ready for on-site transplanting and propagating. Participants will receive plantlets ~ 8 months after submitting F1 seed. On-site seed increase empowers participants and allows for on-site genotyping. For maximum benefit, participants should jointly identify cross combinations and participate jointly in the assessment of cross progeny. To assist in circumventing the issue of recalcitrance in another culture, 5 – 10 different F1 combinations are recommended. Our specific objective for this proposal is to provide ~1,000 doubled haploids to barley researchers across the US.