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One of the main objectives of the VDHR research area is to increase the efficiency of coordinated project breeding programs in developing and releasing FHB-resistant varieties. Doubled haploids (DH) shorten variety development time in fall-sown small grains by approximately four years. We plan to expand the use of this technique for the whole Southern Winter Wheat region by the coordinated development of four breeding populations through DH production followed by collaborative phenotyping across the region once the DH lines are developed and seed is being increased for testing. This proposal fits into the overall Coordinated Project because it will quickly provide inbred breeding lines having several diverse FHB resistance genes (exotic and native) to five breeding programs for testing in the Southern Winter Wheat (SWW) region. We plan to use the doubled haploid facility at Heartland Plant Innovations for DH production. Approximately 200 DH lines will be developed for three of the populations and 400 lines will be developed for a fourth population. Three of the populations will utilize University of Maryland parents containing three QTL for FHB resistance (*Fhb1*, *FHB5AS*, and *FHB2DL*). The second parents in the crosses are high yielding, broadly adapted lines with excellent agronomic and end use characteristics but with low levels of FHB resistance. One cross will utilize the cross LA05102C-8-8 / LA12285 which is segregating for native FHB resistance. Over all three populations of DH lines developed from crosses to the MD parents, 400 will contain *Fhb1*, the most effective QTL for resistance. Two hundred will contain *Fhb1* plus one of the remaining two QTL and 100 of the DH lines will contain all three QTL. The VA and NC programs opted to share a single population of 400 DH lines, in order to increase the frequencies of lines with multiple QTL. Haploid plants will be evaluated for the presence of the three QTL, and those haploids containing *Fhb1* alone, and *Fhb1* plus one or two of the other QTL will undergo chromosome doubling. Current turn-around time for developing DH by Plant Innovations is 12 months from the receipt of the seed. Seed will need to be increased for testing because only 7-10 seeds/DH are guaranteed from the initial development of DH lines. The estimated cost will be \$18 per haploid, \$1 for tissue collection, \$6 for marker analyses at three QTL, and \$12 for chromosome doubling. For a population of 200 haploids, that entails \$3,600 for haploid production, \$200 for tissue collection, \$1,200 for marker analysis and \$1,200 for chromosome doubling of 100 selected haploids. The total per population with an MD parent is \$6,200. The total for the LA cross, which will not undergo marker selection of haploid plants will be \$6,000. This pre-proposal was developed through the cooperation of all the breeding programs in the Southern region and will be a source of outstanding SRWW lines selected for FHB resistance that will be available and shared with other wheat breeders. This pre-proposal has great potential to deliver high-impact FHB resistant varieties in a short period of time.