

IWYP Publications in Journals Exceed 200

Recently, the number of publications published in major scientific journals emanating from studies carried out by IWYP-associated scientists and institutions exceeded 200. Assessment of the 200+ papers provides a robust picture of IWYP's scientific emphases and achievements. Collectively they represent the leading edges of wheat research over the past 8 years. They make a powerful collection and illustrate how wheat research has been transformed and positioned to launch the next decade's breakthroughs. The full list is available on the IWYP website (<https://iwyp.org/publications/>).

IWYP was initiated in late 2014. Internationally constructed groups were competitively funded after reviews of proposals focused on providing the knowledge, tools and germplasm to improve wheat yields and in addition two national Coordinated Agricultural Programs (CAPs) were funded in the USA by USDA NIFA beginning in 2017 and 2022. Publications started soon after IWYP initiation, reaching their peak in 2019-21 as expected given the funding profile.

Underlying this impressive number of publications is the large numbers of people, many being trained early in their careers, who have worked collaboratively with others around the world to make discoveries and acquire new knowledge. In many instances, scientists moved between laboratories and continents to progress the research. Furthermore, much of the research was based on sets of germplasm shared across research groups, something possible with the international coordination behind the initiative. Such collaboration has greatly enhanced the conclusions that can be drawn.

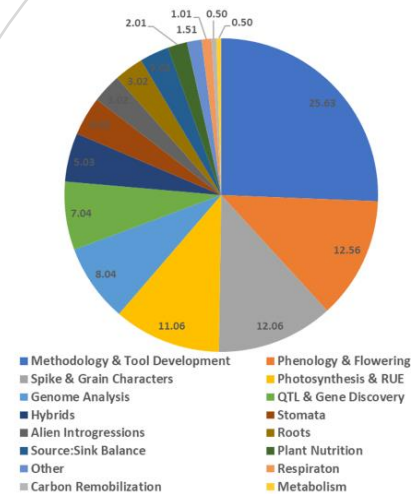
Topics Featured in the Publications

IWYP was formed to address step-changes in yield potential and so it is not surprising that a large fraction of the publications focus on traits known to have big effects on grain yield. As expected, a large fraction also focus on technological advancements because these provide the means of discovering new knowledge and assaying traits, genes and phenotypes more efficiently, all of which enable the world's breeding programs. They include recognition of new QTLs and gene candidates underlying key traits together with relevant molecular markers, how allelic variants combine to create yield increases and how aerial monitoring of plots can provide quantitative estimates of key yield traits. Many of the publications are devoted to improving the efficiencies of photosynthesis and radiation use efficiency, including the control of stomata (major source traits), phenology, flowering time and spike development (sink traits). Some papers also report the yield gains achieved from trialing new selections in a variety of different environments. The overall IWYP Science Program and sets of publications is pulled together by the three publications carrying the words "Wiring Diagram" in their titles because these three seminal publications integrate today's knowledge on source and sink traits in determining grain yields.

Impacts for Plant Breeding

While published information is a driver for better outcomes in wheat breeding, the lines, markers and details of technologies and trait assays are tools that need to be in the hands of breeders to enhance breeding. Lists of such items are also published by IWYP to enhance the practical impacts of the publications. IWYP also publishes these monthly Science Briefs to alert a wide audience about IWYP's progress relevant to wheat yield improvement.

Percent of Publications by Category



IWYP RELATED RESEARCH
Publications

