

POTENTIAL OF SAFLUFENACIL FOR PREHARVEST DESICCATION OF SUNFLOWER. Kirk A. Howatt, Brian M. Jenks, Phillip W. Stahlman, and Michael Moechnig, Associate Professor, Department of Plant Sciences, North Dakota State University, Fargo, ND 58108-6050, Associate Professor, North Central Research and Extension Center, North Dakota State University, Minot, ND 58701-7645, Professor, Kansas State University Agricultural Research Center, Hays, KS 67601-9228, and Assistant Professor, South Dakota State University, Brookings, SD 57007.

Experiments were established near Minot and Fargo, ND; Brookings, SD; and Hays, KS, to evaluate the response of sunflower to herbicides applied at three desiccation stages. The treatment list included a control and a factorial arrangement of three application timings, 50%, 40%, and 30% seed moisture, and four desiccants, paraquat at 420 g ai/ha plus non-ionic surfactant at 0.25% vol/vol, saflufenacil at 50 g ai/ha plus methylated seed oil at 1% vol/vol and ammonium sulfate at 1600 g ai/ha, glyphosate at 840 g ae/ha plus ammonium sulfate at 1600 g/ha, and glyphosate at 840 g/ha plus saflufenacil at 25 g/ha with methylated seed oil at 1% vol/vol and ammonium sulfate at 1600 g/ha. Paraquat was applied in 180 L/ha spray volume while other desiccant treatments were applied in 90 L/ha spray volume. Visible necrosis overestimated the actual desiccation and drying effect of each treatment. The receptacle moisture content was the most restrictive based on desired moistures at harvest of 15% seed moisture and 40% receptacle moisture. More benefit to using a desiccant was documented in Minot and Fargo than Brookings and Hays. Herbicide application at 30% moisture allowed earlier harvest in Minot and Fargo by about 5 to 8 d, but the choice of herbicide did not substantially affect the date of harvest. Sunflower treated with saflufenacil at 40% seed moisture reached 40% receptacle moisture 27 d earlier than untreated sunflower in Minot but only 5 d earlier in Hays, illustrating the effect of fall weather. Treatment, even at 50% moisture, did not affect yield or test weight relative to the untreated. Likewise, treatments did not affect oil composition. Herbicide application at 50% moisture caused slightly lower oil content compared with the control but values were still above minimum values to avoid discounts. Choice of herbicide did not affect oil content.