Peanut Tolerance and Weed Control with Warrant.

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Prowl H2O (pendimethalin), Valor SX (flumioxazin) and Dual Magnum (S-metolachlor) are currently registered for use preemergence (PRE) in peanut. Warrant (acetochlor) is an encapsulated herbicide currently labeled for use in soybean and cotton, and may be available for use in peanut in 2014. It is well-documented that the first 4 to 6 weeks is critical for peanut growth and development. The objective of this research was to examine peanut response and control of Palmer amaranth (*Amaranthus palmeri*), horse purslane (*Trianthema portulacastrum*), Texas millet (*Panicum texanum*) and citronmelon (*Citrullus lanatus*) using these PRE herbicides alone or as part of a “system” for season-long weed control.

Prowl H2O at 0.95 lb ai/A, Valor SX at 0.95 lb ai/A, Dual Magnum at 1.3 lb ai/A, and Warrant at 1.12 lb ai/A were applied alone or in a tank-mix combination. In a separate series of treatments, Warrant PRE was followed by (fb) postemergence (POST) applications of either Cadre (imazapic) at 0.063 lb ai/A, Cobra (lactofen) at 0.2 lb ai/A, Cobra plus Dual Magnum, or Cobra plus Warrant. Preemergence applications were followed by 0.8 inches of overhead irrigation within 24 hours of application. Four weeks after planting, Palmer amaranth was controlled 95 to 100% following all PRE treatments. Prowl H2O was the only herbicide when applied alone did not control Palmer amaranth 100%. Thirteen weeks after the PRE treatments, Dual Magnum applied alone and Dual Magnum + Prowl H20 controlled Palmer amaranth at least 95%. Prowl H2O, Valor SX, and Warrant applied alone controlled this weed 30%, 62%, and 78%, respectively. Thirteen weeks after PRE treatments or 4 weeks after the POST treatments were applied, all “systems” controlled Palmer amaranth at least 80%. Prowl H2O fb Cadre and Prowl H2O fb Dual Magnum + Cobra controlled Palmer amaranth at least 94%. Approximately 20 weeks after PRE treatments, only Dual Magnum PRE (83%), Prowl H2O + Dual Magnum PRE (87%), and Prowl H2O + Warrant PRE (82%) controlled Palmer amaranth at least 80%. No peanut injury was observed 4 weeks after planting (WAP), but at 6 WAP Dual Magnum and Warrant applied alone or in combination with Prowl H2O caused up to 5% injury. This type of chloroacetamide-induced injury (stunt) is common in Texas. Peanut yield ranged from 1346 to 1770 lb/A and was not different from the non-treated control. In a second study on the High Plains, complete Palmer amaranth control was observed 6 WAP and control following Valor, Dual Magnum, and Warrant was 63%, 79 to 89%, and 72 to 80%, respectively, 11 WAP. No peanut injury was
observed 4 WAP and slight peanut injury (2%) was observed 6 WAP following several PRE treatments. Peanut yield ranged from 1222 to 1921 lb/A and was not different from the non-treated control. In south Texas, PRE applications of Valor, Dual Magnum, and Warrant controlled horse purslane at least 87% 23 days after treatment (DAT). Valor controlled smellmelon (75 to 81%) better than Dual Magnum (33 to 62%) and Warrant (13 to 40%). At 35 DAT (11 days after POST applications), all treatments that included POST applications of Cobra controlled horse purslane and smellmelon at least 96% while Valor alone controlled horse purslane and smellmelon 73 and 65%, respectively. Dual Magnum alone controlled horse purslane 57% and smellmelon 67% while Warrant alone controlled horse purslane 53% and smellmelon 37%. In separate studies, Texas millet was controlled at least 89% following all PRE herbicides 27 DAT. Citronmelon control was greater than 90% with Prowl H₂O + Warrant PRE or Prowl H₂O followed by POST applications of Cobra. No peanut injury was noted with Warrant. Peanut cultivars were evaluated following Warrant at 1.12 and 2.24 lb ai/A applied preplant incorporated, PRE, early-postemergence (EPOST), and POST. Neither peanut stunting nor yield loss was noted with Tamrun OL01 or Tamrun OL07. In a PRE study in the High Plains, no injury was noted with 4 runner market types (Flavorrunner 458, Tamrun OL01, Tamrun OL02, Tamrun OL07) and one Virginia market type (Brantley). In summary, Warrant was efficacious on a number of weed species in Texas peanut and several cultivars appear to be very tolerant.