Plant breeders at NDSU have released a new naked oat variety, *Avena sativa L. var. Paul*, which appears to have potential for replacing corn and a portion of the soybean meal in starter diets for weanling pigs. This substitution would be advantageous for producers in the extreme Northern Great Plains where corn and soybean are not commonly grown. Weanling pigs (128 lb, PIC L326 × C-15; Init. BW = 6.36 kg) were weaned, moved to a segregated early-weening (SEW) facility and presented the following meal-type, 3-phase starter diets: corn-soybean meal control (0%-NO), 50% naked oat (50%-NO), 75% naked oat (75%-NO) and 100% naked oat (100%-NO). Barrows and gilts were balanced across dietary treatments, and pen served as the experimental unit (8 pigs/pen; 4 pens/treatment). Pig performance was monitored over a 29d starter period. Numerical differences e for average daily gain (ADG), average daily feed intakes (ADFI) and gain:feed (G:F) existed in phase-1 post-weaning (9d), and subsequently in phase-2 (13d), but none were significant (P>.05). In phase-3 (7d), pigs fed 50%-NO tended to consume more feed than the other treatments (P=.06), but ADG was only numerically slower. Except for the depression observed with 50%-NO in phase-3, the levels and grain bases evaluated supported a smooth transition from nutrition to the nutrient-dense nursery diets. Over the entire 29d starter period, numerically slower ADG and ADFI, and numerically equal ADFI, for the 50%-NO treatment, translated into the lowest G:F ratio (P=.035) and the highest feed cost/pound of gain (P=.05). When 29-day performance for the 0%-NO, 75%-NO and 100%-NO was evaluated, only small numerical differences for ADG, ADFI, G:F and feed cost/pound of gain were observed. The data, with respect to replacing one-half of the corn with naked oat, is inconclusive. However, based on growth and economic performance, corn and a portion of the soybean meal in SEW pig starter diets can be completely replaced with Paul oat. 

Key Words: Pigs, Paul Oat, Starter Diet.


Three experiments were conducted to evaluate an experimental potato protein (EPP; 15.6 mg/100g total glycoalkaloids) on nursery pig growth performance. In Exp. 1, 180 weanling pigs (5.9 kg and 20 d of age) were fed a control diet containing 20% dried whitefish meal and 7% spray-dried animal plasma (AP; 1.5% total and 1.26% digestible lysine). Additional dietary treatments consisted of EPP (5.18% digestible lysine) replacing the 25, 50, 75, or 100% of the digestible lysine provided by AP (5.92% digestible lysine). From d 0 to 14, ADG tended to increase (quadratic P <.11) with increasing EPP (290, 349, 322, 336, and 331g/d, respectively). Feed efficiency (G:F) increased (linear P <.05) with increasing EPP (83, 89, 92, 89, and 97, respectively). In Exp. 2, 210 weanling pigs (5.5 kg and 20 d of age) were fed a control diet containing 20% dried whey, 17.5% dried skim milk and 4% fish meal (1.46% total and 1.26% digestible lysine). Additional diets consisted of 3.5 and 7% AP or 4 and 8% EPP and lactose replacing the digestible lysine provided by dried skim milk and 4% fish meal. From d 0 to 7, increasing AP increased (linear, P <.05) ADG (286, 304, 331 g/d, respectively). However, ADG increased then decreased (quadratic P <.10) with increasing EPP (286, 295, 240 g/d, respectively). From d 0 to 14, increasing AP had no effect on ADG (377, 367, and 377 g/d, respectively) but ADG tended to increase then decrease (quadratic P <.10) with increasing EPP (377, 390, 349, respectively). In Exp. 3, 255 weanling pigs (5.3 kg and 17 d of age) were fed a common diet from d 0 to 7, then fed diets containing either 2.5% spray-dried blood meal, 5.51% synthetic menhaden fish meal, 4.17% conventional (303 mg/100g total glycoalkaloids) or EPP from d 7 to 28. No differences were observed in growth performance; however, pigs fed EPP had numerically greater ADG and G:F than those fed conventional potato protein. These results suggest that EPP can be a replacement for a portion of the AP in diets for early-weaned pigs.

Key Words: Pigs, Potato protein, Animal plasma.